RC

ISSN 0006-291X

1988 Index Issue

Cumulative Indexes for
Volumes 150–157

BIOCHEMICAL AND BIOPHYSICAL Research Communications

MAR 3 1 1989
LIBRARIES

EDITORS

John N. Abelson
Ernesto Carafoli
Pedro Cuatrecasas
I. C. Gunsalus
B. L. Horecker
Yasuo Kagawa
M. Daniel Lane
William J. Lennarz
William D. McElroy
Masami Muramatsu
Claude Paoletti
Alberto Sols

ERIODICAL
QH
301
B358
I. LIBRARY

CURRENT ISSUE SCI-REF. DISPLAY

ACADEMIC PRESS, INC.
Harcourt Brace Jovanovich, Publishers
San Diego New York Boston
London Sydney Tokyo Toronto

BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS

Manuscripts should be sent to one of the following editors:

JOHN N. ABELSON
Division of Biology 147–75
California Institute of Technology
Pasadena, California 91125

ERNESTO CARAFOLI
Laboratorium für Biochemie
ETH-Zentrum
CH-8092 Zurich, Switzerland

PEDRO CUATRECASAS
Department of Research and Development
Glaxo, Inc.
5 Moore Drive
Research Triangle Park
North Carolina 27709

I. C. GUNSALUS
420 RAL, 1209 W. California
University of Illinois
Urbana, Illinois 61801

B. L. HORECKER
Room F-104
Cornell University Medical College
1300 York Avenue
New York, New York 10021

YASUO KAGAWA
Department of Biochemistry
Jichi Medical School
Minamikawachi-Machi Kawachi-gun
Tochigi-ken 329-04, Japan

M. DANIEL LANE
Department of Biological Chemistry
The Johns Hopkins University
725 No. Wolfe Street
Baltimore, Maryland 21205

WILLIAM J. LENNARZ
Department of Biochemistry and Molecular Biology (Box 117)
University of Texas System Cancer Center
M.D. Anderson Hospital and Tumor Institute
1515 Holcombe Boulevard
Houston, Texas 77030

WILLIAM D. McELROY
Department of Biology, B-022
University of California, San Diego
La Jolla, California 92093

MASAMI MURAMATSU
Department of Biochemistry
The University of Tokyo
Faculty of Medicine
Hongo, Bunkyo-ku
Tokyo 113, Japan

CLAUDE PAOLETTI
Laboratoire de Biochimie
INSERM-CNRS
Institut Gustave-Roussy
Rue Camille Desmoulins
94805 Villejuif, France

ALBERTO SOLS
Instituto Investigaciones Biomédicas CSIC
Facultad de Medicina UAM
Arzobispo Morcillo 4
28029 Madrid, Spain

BIOCHEMICAL AND BIOPHYSICAL Research Communications

EDITORS

John N. Abelson
Ernesto Carafoli
Pedro Cuatrecasas
I. C. Gunsalus
B. L. Horecker
Yasuo Kagawa
M. Daniel Lane
William J. Lennarz
William D. McElroy
Masami Muramatsu
Claude Paoletti
Alberto Sols

1988 Index Issue

Cumulative Indexes for Volumes 150–157

ACADEMIC PRESS, INC.
Harcourt Brace Jovanovich, Publishers
San Diego New York Boston
London Sydney Tokyo Toronto

Copyright © 1988 by Academic Press, Inc.

ALL RIGHTS RESERVED

No part of this publication may be reproduced or transmitted in any form, or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (27 Congress Street, Salem, Massachusetts 01970), for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1988 articles are as shown on the article title pages; if no fee code appears on the title page, the copy fee is the same as for current articles.

0006-291X/88 $1.50

MADE IN THE UNITED STATES OF AMERICA

BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS
(ISSN 0006-291X)

Published semimonthly by Academic Press, Inc., 1 East First Street, Duluth, MN 55802

1988: Volumes 150–157. Price: $680.00 U.S.A. and Canada: $805.00 all other countries

1989: Volumes 158–165. Price: $712.00 U.S.A. and Canada; $879.00 all other countries

All prices include postage and handling.

Information concerning personal subscription rates may be obtained by writing to the Publishers. All correspondence and subscription orders should be addressed to the office of the Publishers at 1 East First Street, Duluth, MN 55802. Send notices of change of address to the office of the Publishers at least 6 to 8 weeks in advance. Please include both old and new addresses. POSTMASTER: Send changes of address to *Biochemical and Biophysical Research Communications*, 1 East First Street, Duluth, MN 55802.

Second class postage paid at Duluth, MN, and at additional mailing offices.

Copyright ©1988 by Academic Press, Inc.

BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS

1988 Index Issue
Cumulative Indexes for Volumes 150–157

Volume Contents v
Author Indexes 1
Subject Index 39

CUMULATIVE TABLE OF CONTENTS FOR VOLUMES 150–157

Volume 150, Number 1, January 15, 1988

AUTHOR INDEX, Volume 150, Number 1, January 15, 1988 ii

Immune Cytokine Inhibition of β-Adrenergic Agonist-Stimulated Cyclic AMP Generation in Cardiac Myocytes *Tod Gulick, Mina K. Chung, Stephen J. Pieper, George F. Schreiner, and Louis G. Lange* 1

Isolation and Partial Characterization of the Gene for Cytochrome *P*-450 3a (P-450_{ALC}) and a Second Closely Related Gene *Shahrokh C. Khani, Todd D. Porter, and Minor J. Coon* 10

Siderophore Production by *Salmonella typhi* *Asma Ismail* 18

Peptide YY Receptors in the Brain *Akio Inui, Manabu Oya, Minoru Okita, Toru Inoue, Noriaki Sakatani, Hideki Morioka, Kozui Shii, Koichi Yokono, Nobuhiko Mizuno, and Shigeaki Baba* 25

Molecular Cloning of *Escherichia coli* K-12 *ggt* and Rapid Isolation of γ-Glutamyltranspeptidase *Hideyuki Suzuki, Hidehiko Kumagai, Takashi Echigo, and Tatsurokuro Tochikura* 33

Specificity of Oxygen Radical Scavengers and Assessment of Free Radical Scavenger Efficiency Using Luminol-Enhanced Chemiluminescence *Parinam S. Rao, John M. Luber, Jr., Joyce Milinowicz, Parviz Lalezari, and Hiltrud S. Mueller* 39

Reaction of Tissue-Type Plasminogen Activator with 4-Methylumbelliferyl-*p*-guanidinobenzoate Hydrochloride *Tetsumei Urano, Shoko Urano, and Francis J. Castellino* 45

Angiotensin II Induces Expression of the c-*fos* Gene through Protein Kinase C Activation and Calcium Ion Mobilization in Cultured Vascular Smooth Muscle Cells *Yasuhiro Kawahara, Michitoshi Sunako, Terutaka Tsuda, Hisashi Fukuzaki, Yasuo Fukumoto, and Yoshimi Takai* 52

Augmented Synthesis of β-Human Atrial Natriuretic Polypeptide in Human Failing Hearts *Akira Sugawara, Kazuwa Nakao, Narito Morii, Takayuki Yamada, Hiroshi Itoh, Shozo Shiono, Yoshihiko Saito, Masashi Mukoyama, Hiroshi Arai, Kazunobu Nishimura, Kenji Obata, Hirofumi Yasue, Toshihiko Ban, and Hiroo Imura* 60

Glu 46 of Ribonuclease T_1 Is an Essential Residue for the Recognition of Guanine Base *S. Nishikawa, T. Kimura, H. Morioka, S. Uesugi, T. Hakoshima, K. Tomita, E. Ohtsuka, and M. Ikehara* 68

Amyloid β-Protein Gene Duplication Is Not Common in Alzheimer's Disease: Analysis by Polymorphic Restriction Fragments *Hirokazu Furuya, Hiroyuki Sasaki, Ikuo Goto, Caine W. Wong, George G. Glenner, and Yoshiyuki Sakaki* 75

Down Regulation of c-*myc*, c-*fos*, and *erb*-B during Estrogen-Induced Proliferation of the Chick Oviduct *Randall J. Cohrs, Biswendu B. Goswami, and Opendra K. Sharma* 82

Primary Structure of Nonspecific Cross-reacting Antigen (NCA), a Member of Carcinoembryonic Antigen (CEA) Gene Family, Deduced from cDNA Sequence *Yasunori Tawaragi, Shinzo Oikawa, Yuji Matsuoka, Goro Kosaki, and Hiroshi Nakazato* 89

Post-translational Modification of Interleukin 2 Is a Late Event during Activation of Human T Lymphocytes by Ionophore A23187 and Phorbol Ester *Harald S. Conradt, Hansjörg Hauser, Claudia Lorenz, Harald Mohr, and Annelore Plessing* 97

Copyright © 1988 by Academic Press, Inc.
All rights of reproduction in any form reserved.

Monensin Is Obligatory for the Cytotoxic Action of a Disulfide-Linked Methotrexate–antitransferrin Receptor Conjugate
Vic Raso, Catherine Fehrmann, Vishnu C. Solan, and Andre Rosowsky 104

The Human Docking Protein Does Not Associate with the Membrane of the Rough Endoplasmic Reticulum via a Signal or Insertion Sequence-Mediated Mechanism
Michael Hortsch and David I. Meyer 111

Regulation of Diacylglycerol Kinase in the Transition from Quiescence to Proliferation in *Dictyostellium discoideum*
Benilde Jímenez, Michiel M. Van Lookeren Campagne, Angel Pestaña, and Margarita Fernández-Renart 118

Modulation of Protein Kinase C Activity during Inhibition of Tumor Cell Growth by IFN-β and -γ *Masahiko Ito, Yoshiyuki Takami, Fuminori Tanabe, Shiro Shigeta, Kazuo Tsukui, and Yoshimi Kawade* 126

Partial Purification and Characterization of Hepatocyte Proliferation Stimulatory Factor from Liver of Rats Treated with D-Galactosamine
Shoichi Suemori, Takaaki Eto, Kazuo Yamada, Toshio Nakamura, Toshio Nakanishi, and Goro Kajiyama 133

Impaired Secretion of Type III Procollagen in Ehlers–Danlos Syndrome Type IV Fibroblasts: Correction of the Defect by Incubation at Reduced Temperature and Demonstration of Subtle Alterations in the Triple-Helical Region of the Molecule
Andrea Superti-Furga and Beat Steinmann 140

Distribution of Isoaccepting tRNAs and Codons for Proline and Glycine in Collagenous and Noncollagenous Chicken Tissues *B. Ouenzar, B. Agoutin, F. Reinisch, D. Weill, F. Perin, G. Keith, and T. Heyman* 148

Thioredoxin Fragment 31-36 Is Reduced by Dihydrolipoamide and Reduces Oxidized Protein *Abraham Spector, Ruey-Ruey C. Huang, Guo-Zai Yan, and Ren-Rong Wang* 156

Alterations of Protein Kinase Isozymes in Transplantable Human Lung Cancer with Special Reference to the Phosphorylation of Arylsulfatase B
Mahmoud Balbaa, Shinsei Gasa, and Akira Makita 163

On the Mechanism of Binding of Calpastatin, the Protein Inhibitor of Calpains, to Biologic Membranes *Ronald L. Mellgren* 170

Differential Effects of 15-HPETE on Arachidonic Acid Metabolism in Collagen-Stimulated Human Platelets
Harry R. Vedelago and Vhundi G. Mahadevappa 177

Polyamine Metabolism in an Obligately Alkalophilic *Bacillus alcalophilus* That Grows at pH 11.0 *Kuang Yu Chen and Suzanne Cheng* 185

Progestin Regulation of EGF-Receptor mRNA Accumulation in T-47D Human Breast Cancer Cells *Leigh C. Murphy, Liam J. Murphy, and Robert P. C. Shiu* 192

Phosphorylation of Phosphoprotein Phosphatase Inhibitor-2 (I-2) in Rat Fat Cells
J. C. Lawrence, Jr., Jeffrey Hiken, Barry Burnette, and A. A. DePaoli-Roach 197

Regulation of Murine α-, β-Major-, and β-Minor-Globin Gene Expression
Nadine Weich, Paul A. Marks, and Richard A. Rifkind 204

Calcium-Mediated Hemagglutination by Serum Amyloid P Component and the Inhibition by Specific Glycosaminoglycans *Hideaki Hamazaki* 212

Frequency in Hypertensives of Alleles for a RFLP Associated with the Renin Gene
Brian J. Morris and Lyn R. Griffiths 219

A New Prostaglandin E1 Analog (TFC-612) Prevents a Decrease in Motor Nerve Conduction Velocity in Streptozocin-Diabetic Rats
Hitoshi Yasuda, Masanobu Sonobe, Ikuo Hatanaka, Makio Yamashita, Yasufumi Miyamoto, Masahiko Terada, Masanori Amenomori, Ryuichi Kikkawa, Yukio Shigeta, Yukio Motoyama, and Noriyuki Saito 225

Two New Hormones: Prohormone Atrial Natriuretic Peptides 1–30 and 31–67 Circulate in Man *Chris J. Winters, Alan L. Sallman, Jane Meadows, David M. Rico, and David L. Vesely* 231

Different Molecular Weight Forms of Opioid Receptors Revealed by Polyclonal Antibodies *S. Roy, Y. X. Zhu, N. M. Lee, and H. H. Loh* 237
Solution and Membrane Structure of Enkephalins as Studied by Infrared Spectroscopy *Witold K. Surewicz and Henry H. Mantsch* 245
Copper(II)ethylenediaminetetraacetate Does Disproportionate Superoxide *William M. Willingham and John R. J. Sorenson* 252
n-Butyrate Increases c-*erb* A Oncogene Expression in Human Colon Fibroblasts *Rebecca S. Bahn, Jay C. Zeller, and Terry J. Smith* 259
Increase of $(Ca^{2+}+Mg^{2+})$-ATPase Activity of Renal Basolateral Membrane by Parathyroid Hormone via Cyclic AMP-Dependent Membrane Phosphorylation *Kazuyuki Itoh, Shigeto Morimoto, Tsunehito Shiraishi, Kazuhisa Taniguchi, Toshio Onishi, and Yuichi Kumahara* 263
Alkylacylglycerol Molecular Species in the Glycosylinositol Phospholipid Membrane Anchor of Bovine Erythrocyte Acetylcholinesterase *William L. Roberts, John J. Myher, Arnis Kuksis, and Terrone L. Rosenberry* 271
Activation of S_6 Kinase in Cultured Vascular Smooth Muscle Cells by Submitogenic Levels of Thrombospondin *Timothy Scott-Burden, Thérèse J. Resink, Ursula Baur, Maria Bürgin, and Fritz R. Bühler* 278
TSH Regulation of Ferritin H-Chain Messenger RNA Levels in Rat Thyroids *Matilde Valeria Ursini and Vittorio de Franciscis* 287
Selective Inhibition of Proteins Synthesized from Different mRNA Species in Reticulocyte Lysates Containing L-Pyrroline-5-carboxylic Acid *Steven J. Mick, Robert E. Thach, and Curt H. Hagedorn* 296
Molecular Regulation of Ethanol-Inducible Cytochrome *P*-450-IIEI in Hamsters *Shinji Kubota, Jerome M. Lasker, and Charles S. Lieber* 304
Aromatization and 19-Hydroxylation of Androgens by Rat Brain Cytochrome *P*-450 *Shinichi Miyairi, Osamu Sugita, Shigeru Sassa, and Jack Fishman* 311
Histamine H_1-Receptor in the Retina: Species Differences *Sadako Sawai, Nai Ping Wang, Hiroyuki Fukui, Masakatsu Fukuda, Reizo Manabe, and Hiroshi Wada* 316
Cholera Toxin Affects Nuclear ADP-Ribosylation in GH1 Cells *Ana Aranda, Angel Pascual, Richard Copp, and Herbert Samuels* 323
Isolation and Characterization of a Novel 39-kDa Whey Protein from Bovine Mammary Secretions Collected during the Nonlactating Period *J. J. Rejman and W. L. Hurley* 329
Fungal Mycelia as a Novel Source of Eicosapentaenoic Acid. Activation of Enzyme(s) Involved in Eicosapentaenoic Acid Production at Low Temperature *Sakayu Shimizu, Yoshifumi Shinmen, Hiroshi Kawashima, Kengo Akimoto, and Hideaki Yamada* 335
Inhibitors of the Sulfation of Proteins, Glycoproteins, and Proteoglycans *Glen L. Hortin, Mary Schilling, and James P. Graham* 342
Comparative Effects of Interleukin 1 and a Phorbol Ester on Rheumatoid Synovial Cell Fructose 2,6-Bisphosphate Content and Prostaglandin E Production *David J. Taylor, John M. Evanson, and David E. Woolley* 349
Activation of Phospholipase D by Chemotactic Peptide in HL-60 Granulocytes *Jin-Keon Pai, Marvin I. Siegel, Robert W. Egan, and M. Motasim Billah* 355
Regulation of Lactate/Pyruvate Ratios by Cyclic AMP in *Neurospora crassa* *Martin L. Pall and Carla K. Robertson* 365
Prediction of Signal Sequence-Dependent Protein Translocation in Bacteria: Assessment of the *Escherichia coli* Minicell System *David B. Davies, Mohamed Shohayeb, and Ian Chopra* 371
Arachidonate 15-Lipoxygenase from Human Eosinophil-Enriched Leukocytes: Partial Purification and Properties *Elliott Sigal, Dorit Grunberger, John R. Cashman, Charles S. Craik, George H. Caughey, and Jay A. Nadel* 376

Conformational Change on Calcium Binding by the Lipopeptide Antibiotic Amphomycin. A C.D. and Monolayer Study
J. H. Lakey, R. Maget-Dana, and M. Ptak 384
Determination of the Effect of Acetylation of Specific Lysine Residues in Human Growth Hormone on Its Affinity for Somatogenic Receptors by an Affinity Selection Technique *Liew-Cheng Teh and George E. Chapman* 391
Noncyclic Photoreductive Carbon Fixation in Photosynthesis. Light and Dark Transients of the Glycerate-3-P Special Pair *Francis K. Fong and Karen A. Butcher* 399
A Magnesium-Dependent Guanylate Cyclase in Cell-Free Preparations of *Dictyostelium discoideum* *Pim M. W. Janssens and Corina C. C. de Jong* 405
Expression of Epidermal Growth Factor Receptor Proto-Oncogene mRNA in Regenerating Rat Liver *Alfred C. Johnson, Susan H. Garfield, Glenn T. Merlino, and Ira Pastan* 412
Dual Effect of Glucose on Cytoplasmic Ca^{2+} in Single Pancreatic β-Cells
Eva Grapengiesser, Erik Gylfe, and Bo Hellman 419
Localization of the Active Center of Microsomal Cytochrome *P*-450
Arkadii G. Krainev, Lev M. Weiner, Ivan S. Alferyev, and Nikolai V. Mikhalin 426
Ligand-Dependent Maintenance of Ethanol-Inducible Cytochrome *P*-450 in Primary Rat Hepatocyte Cell Cultures *Erik Eliasson, Inger Johansson, and Magnus Ingelman-Sundberg* 436
Proton NMR Studies of the GDP•MG^{2+} Complex of the Ha-*ras* Oncogene Product p21
Ilme Schlichting, Alfred Wittinghofer, and Paul Rösch 444
Different Mechanisms for the Receptor-Mediated Antimineralocorticoid Action of Two New Spirolactone Derivatives *M. K. Agarwal and M. Kalimi* 449
Adrenocortical Pregnenolone-Binding Protein: Identification and Antibody Development *Young J. C. Lee and Charles A. Strott* 456
Similarity between the Estrogen Receptor and the DNA-Binding Domain of the Tetracycline Repressor *Michael E. Baker* 463
Membrane-Stabilizing Effect of Vitamin E: Effect of α-Tocopherol and Its Model Compounds on Fluidity of Lecithin Liposomes *Shiro Urano, Keiko Yano, and Mitsuyoshi Matsuo* 469
Identification of an Acid-Lipase in Human Serum Which Is Capable of Solubilizing Glycophosphatidylinositol-Anchored Proteins
M. Lucia Cardoso de Almeida, Mervyn J. Turner, Boris B. Stambuk, and Sergio Schenkman 476
Purification and Characterization of Placental Protein 5 *Ralf Bützow, Marja-Liisa Huhtala, Hans Bohn, Ismo Virtanen, and Markku Seppälä* 483
S-Adenosyl-L-methionine Protects the Hippocampal CA1 Neurons from Ischemic Neuronal Death in Rats *Hiromi Sato, Hisayo Hariyama, and Koei Moriguchi* 491
Inhibition of Natural Killer Cell Activity by Eicosapentaenoic Acid *in Vivo* and *in Vitro*
Naohiro Yamashita, Eiji Sugiyama, Tomohito Hamazaki, and Saburo Yano 497
Renotropic Activity of Lutropin: Direct Stimulation of DNA Synthesis of Cultured Rat Renal Cortical Cells *Kaoru Nomura, Nobuo Horiba, Yuko Sato, Makoto Ujihara, Hiroshi Demura, and Kazuo Shizume* 506
Identification of [Hydroxyproline^3]-lysyl-bradykinin Released from Human Plasma Protein by Kallikrein *Manabu Sasaguri, Masaharu Ikeda, Munehito Ideishi, and Kikuo Arakawa* 511

Volume 150, Number 2, January 29, 1988

AUTHOR INDEX, Volume 150, Number 2, January 29, 1988 ii
Differential Enzymatic Accessibilities of the 5′ and 3′ Splice Sites of β-Globin Pre-messenger RNA in Splicing Competent HeLa Cell Nuclear Extract
Clay B. Siegall and Ajit Kumar 517

Protein Kinase C-Dependent Phosphorylation of Profilin Is Specifically Stimulated by Phosphatidylinositol Bisphosphate (PIP_2)
Anders Hansson, Göran Skoglund, Ingrid Lassing, Uno Lindberg, and Magnus Ingelman-Sundberg 526

Temporal Association of Calcium Mobilization, Inositol Trisphosphate Generation, and Superoxide Anion Release by Human Neutrophils Activated by Serum Opsonized and Nonopsonized Particulate Stimuli *T. Meshulam, R. D. Diamond, C. A. Lyman, D. R. Wysong, and D. A. Melnick* 532

Novel Feature of Expression of the Sarcotoxin IA Gene in Development of *Sarcophaga peregrina* *Rika Nanbu, Yuki Nakajima, Keiichi Ando, and Shunji Natori* 540

The Weak Immunosuppressant Cyclosporin D as Well as the Immunologically Inactive Cyclosporine H Are Potent Inhibitors *in Vivo* of Phorbol Ester TPA-Induced Biological Effects in Mouse Skin and of Ca^{2+}/Calmodulin Dependent EF-2 Phosphorylation *in Vitro* *M. Gschwendt, W. Kittstein, and F. Marks* 545

A Two Dimensional ^1H NMR Study of the Solution Conformation of Gastrin Releasing Peptide *John A. Carver* 552

1-Palmitoyl-2-thiopalmitoyl Phosphatidylcholine, a Highly Specific Chromogenic Substrate of Phospholipase A_2 *Caroline Balet, Kelly A. Clingman, and Joseph Hajdu* 561

Hypoxic Damage Generates Reactive Oxygen Species in Isolated Perfused Rat Liver *Hartmut Jaeschke, Charles V. Smith, and Jerry R. Mitchell* 568

Transforming Growth Factor β Activates Protein Kinase C in Microvessels Isolated from Immature Rat Brain *Jasna Markovac and Gary W. Goldstein* 575

Insulin Action on Brain Microvessels: Effect on Alkaline Phosphatase
R. E. Catalán, A. M. Martínez, M. D. Aragonés, B. G. Miguel, and A. Robles 583

Chromosome 5 Allele Loss at the Glucocorticoid Receptor Locus in Human Colorectal Carcinomas *David M. Wildrick and Bruce M. Boman* 591

Heterogeneity of Immunoreactive Prolactin in the Rat Brain *William J. DeVito* 599

Insulin-Degrading Enzyme Is Capable of Degrading Receptor-Bound Insulin
Kazuyoshi Yonezawa, Koichi Yokono, Kozui Shii, Joji Hari, Shinji Yaso, Kazuhiko Amano, Taizo Sakamoto, Yoshito Kawase, Hiroyuki Akiyama, Masao Nagata, and Shigeaki Baba 605

Stimulation of DNA Synthesis in Murine Lymphocytes by the Drug Swainsonine: Immunomodulatory Properties *Sandra L. White, Karen Schweitzer, Martin J. Humphries, and Kenneth Olden* 615

DL-*myo*-Inositol 1,4,5-Trisphosphorothioate Mobilizes Intracellular Calcium in Swiss 3T3 Cells and *Xenopus* Oocytes *Colin W. Taylor, Michael J. Berridge, Kenneth D. Brown, Allan M. Cooke, and Barry V. L. Potter* 626

Fluorescence Studies on Clupein Protamines: Evidence for Globular Conformation
Alejandro Arellano, Mauricio Canales, Carolina Jullian, and Juan E. Brunet 633

Seed-Transmissable Expression of Mammalian Metallothionein in Transgenic Tobacco
Indu B. Maiti, Arthur G. Hunt, and George J. Wagner 640

Characterization of a Competitive and Reversible Ligand to E2 Conformation of Na, K ATPase Molecule *Albert L. Rauch and Vardaman M. Buckalew, Jr.* 648

Molecular Analysis of Alcohol Dehydrogenase Electromorphs in Wild Type and Transformed *Drosophila melanogaster* *Mark A. Batzer, Trent D. Desselle, Mark D. Brennan, William R. Lee, and Bruce Tedeschi* 655

Receptor Density and cAMP Accumulation: Analysis in CHO Cells Exhibiting Stable Expression of a cDNA That Encodes the β_2-Adrenergic Receptor
Shaji T. George, Miguel Berrios, John R. Hadcock, Hsien-yu Wang, and Craig C. Malbon 665

Sialic Acid Is Selectively Involved in the Interaction of Agonists with M_2 Muscarinic Acetylcholine Receptors *Jean-Pierre Gies and Yves Landry* 673

Carbachol Partially Inhibits the Plasma Membrane Ca^{2+}-Pump in Microsomes from Pig Stomach Smooth Muscle *L. Missiaen, Y. Kanmura, F. Wuytack, and R. Casteels* 681

A Novel Glucosyltransferase from *Streptococcus mutans* Produces Oligo-isomaltosaccharides *Yoshihisa Yamashita, Nobuhiro Hanada, and Tadamichi Takehara* 687

Reversal of Insulin-Induced Negative Cooperativity by Monoclonal Antibodies That Stabilize the Slowly Dissociating (''K_{super}'') State of the Insulin Receptor *Jia-Li Gu, Ira D. Goldfine, John R. Forsayeth, and Pierre De Meyts* 694

Purification to Homogeneity and Biochemical Characterization of Two Suppressor Factors from Human Malignant T-Cells *M. Ponzoni, P. G. Montaldo, M. Lanciotti, E. Castagnola, C. Cirillo, and P. Cornaglia-Ferraris* 702

Modulation of c-*myc* by Transforming Growth Factor-β in Human Colon Carcinoma Cells *Kathleen M. Mulder, Alan E. Levine, Xochil Hernandez, Mary K. McKnight, Diane E. Brattain, and Michael G. Brattain* 711

Expression of Heme Oxygenase Gene in Rat and Human Liver *Nader G. Abraham, Jane H-C. Lin, Steve M. Mitrione, Michal L. Schwartzman, Richard D. Levere, and Shigeki Shibahara* 717

Serum Contains a Macromolecular Effector Promoting the Synthesis of Nerve Growth Factor (NGF) in L Cells *Rémi Houlgatte, Didier Wion, and Philippe Brachet* 723

Probing of DNA Polymorphic Structure in the Cell with Osmium Tetroxide *E. Paleček, E. Rašovská, and P. Boublíková* 731

DNA Hypomethylation in Ethionine-Induced Rat Preneoplastic Hepatocyte Nodules *Darja Kanduc, Amit Ghoshal, Ernesto Quagliariello, and Emmanuel Farber* 739

Cytochalasin E Enhances the Protein Kinase C-Dependent Process of Secretion *A. Chadwick Cox* 745

The use of a Genetically Engineered Tryptophan to Identify the Movement of a Domain of *Bacillus stearothermophilus* Lactate Dehydrogenase with the Process Which Limits the Steady-State Turnover of the Enzyme *A. D. B. Waldman, K. W. Hart, A. R. Clarke, D. B. Wigley, D. A. Barstow, T. Atkinson, W. N. Chia, and J. J. Holbrook* 752

Analysis of Cellular Expression of Gangliosides by Gene Transfection. I. GD3 Expression in *myc*-Transfected and Transformed 3Y1 Correlates with Anchorage-Independent Growth Activity *Hitoshi Nakaishi, Yutaka Sanai, Kazuko Shiroki, and Yoshitaka Nagai* 760

Analysis of Cellular Expression of Gangliosides by Gene Transfection. II. Rat 3Y1 Cells Transformed with Several DNAs Containing Oncogenes (*fes*, *fps*, *ras*, and *src*) Invariably Express Sialosylparagloboside *Hitoshi Nakaishi, Yutaka Sanai, Masabumi Shibuya, and Yoshitaka Nagai* 766

Characterization of Monoclonal Antibodies CBL3 and TT62 with Differing Antigenic Determinants Specific for Isolated Human Islets *Patrick Soon-Shiong, Roswitha Heintz, and Paul Terasaki* 775

Bovine Adrenal Medullary Cells Contain Functional Atrial Natriuretic Peptide Receptors *S. Heisler and E. Morrier* 781

Detection of Proenzyme Form of *S*-Adenosylmethionine Decarboxylase in Extracts from Rat Prostate *Anthony E. Pegg, Laurie Wiest, and Antti Pajunen* 788

Human Lysozyme: Sequencing of a cDNA, and Expression and Secretion by *Saccharomyces cerevisiae* *Koji Yoshimura, Asae Toibana, and Kazuo Nakahama* 794

Lipid Peroxidation Inhibits Norepinephrine-Stimulated Lipolysis in Rat Adipocytes: Reduction of β-Adrenoceptor Number *Magdalena Rejholcovā, Jiří Wilhelm, and Petr Svoboda* 802

Molecular Cloning and DNA Sequence Analysis of the Human Guanine Nucleotide-Binding Protein Goα *Sukadev Lavu, Jeff Clark, Rupendra Swarup, Kouji Matsushima, Kondiah Paturu, Joel Moss, and Hsiang-Fu Kung* 811

Properties of Component X of Rat Heart Pyruvate Dehydrogenase Complex
Sadayuki Matuda, Kyoko Nakano, Izumi Tabata, Seiji Matuo, and Takeyori Saheki 816

Tin-Protoporphyrin Inhibits Heme Oxygenase and Prevents the Decline in Hepatic Heme and Cytochrome *P*-450 Contents Produced in Nude Mice by Tumor Transplantation
Paul S. Wissel, Richard A. Galbraith, Shigeru Sassa, and Attallah Kappas 822

S-Oxalylglutathione Is a Substrate for γ-Glutamyltransferase (GGT): Implications for the Role of GGT in Cell Proliferation
Gordon A. Hamilton, David J. Buckthal, Nancy J. Kantorczyk, and Stephen S. Skorczynski 828

In Vitro and *in Vivo* DNA Interaction with Carbonyl-Labeled (M)ethylnitrosoureas
Darja Kanduc and Ernesto Quagliariello 835

Pertussis Toxin Inhibits Angiotensin II-Mediated Phosphatidylinositol Breakdown and ADP-Ribosylates a 40 kDa Protein in Cultured Smooth Muscle Cells
Gisela Gaul, Peter Gierschik, and Dieter Marmé 841

Demonstration of the Presence of G-Proteins in Hepatic Microsomal Fraction
Juan Codina, Satoshi Kimura, and Naomi Kraus-Friedmann with the assistance of Sandra Higham 848

Expression of Hepatic Microsomal Cholesterol 7α-Hydroxylase Activity in Lean and Obese Zucker Rats
Pauline M. Tang, Judith A. Finkelstein, and John Y. L. Chiang 853

Oxygen Limitation Induces Indirectly the Synthesis of Cytochrome *P*-450 mRNA in Alkane-Growing *Candida maltosa*
Brigitte Wiedmann, Martin Wiedmann, Stephan Mauersberger, Wolf-Hagen Schunck, and Hans-Georg Müller 859

An Oxygen Enhancement Ratio in an *Escherichia coli* Strain Lacking Both the Iron and Manganese Superoxide Dismutases
M. L. Morse, Daniele Touati, and Diana S. Smith 866

Formation of Lipoxins by Alveolar Macrophages
Sang Joo Kim 870

Erythromycin and Its Derivatives with Motilin-like Biological Activities Inhibit the Specific Binding of ^{125}I-Motilin to Duodenal Muscle
Yoichi Kondo, Keiko Torii, Satoshi Omura, and Zen Itoh 877

Antibodies against Viral Proteins Can Be Produced Effectively in Response to the Increased Uptake of α_2-Macroglobulin:Viral Protein Conjugate by Macrophages
Toshiya Osada, Nobuhiro Noro, Yoichiro Kuroda, and Atsushi Ikai 883

Identification of a Phosphatidylcholine Active Phospholipase C in Human Gallbladder Bile
N. R. Pattinson 890

ERRATUM
Volume 148, Number 3, November 13, 1987: Albert Ferrer, Carme Caelles, and Fausto G. Hegardt, "Reaction of 5′-*p*-Fluorosulfonylbenzoyladenosine with the Catalytic and AMP Allosteric Sites of Microsomal HMG–CoA Reductase Kinase," pp. 1009–1016 897

Volume 150, Number 3, February 15, 1988

AUTHOR INDEX, Volume 150, Number 3, February 15, 1988 iii

Presence of Guanine Nucleotide-Binding Proteins in a Plant Hypocotyl Microsomal Fraction
B. K. Drøbak, E. F. Allan, J. G. Comerford, K. Roberts, and A. P. Dawson 899

Identification of a cDNA Clone for the β-Subunit of the Pyruvate Dehydrogenase Component of Human Pyruvate Dehydrogenase Complex
L. Ho, A. A. Javed, R. A. Pepin, T. J. Thekkumkara, C. Raefsky, J. E. Mole, A. M. Caliendo, M. S. Kwon, D. S. Kerr, and M. S. Patel 904

Cerastes cerastes (Egyptian Sand Viper) Venom Induced Platelet Aggregation as Compared to Other Agonists *Gerald Soslau, M. Farid El-Asmar, and Janet Parker* 909
Characterization of a Photoaffinity Analog of UTP, 5-Azido-UTP for Analysis of the Substrate Binding Site on *Escherichia coli* RNA Polymerase *A-Young M. Woody, Robert K. Evans, and Robert W. Woody* 917
Immunochemical Detection of Cytochrome *P*-450$_{C\text{-}M/F}$ and NADPH-Cytochrome *P*-450 Reductase in Rat Liver and Kidney *Osamu Sugita, Kazuo Nagashima, Shigeru Sassa, and Attallah Kappas* 925
Carboxyethyl γ-Aminobutyric Acid, a Polyamine Derivative, Improves the Recovery of EBV-Transformed Lymphocytes *Antonella Cerino, Marco Bestagno, Marco Colonna, Fernando Fussi, and Giulia C. B. Astaldi Ricotti* 931
NIH-3T3 Cells Expressing High Levels of the c-*ras* Proto-Oncogene Display Reduced Platelet Derived Growth Factor-Stimulated Phospholipase Activity *P. L. Olinger and R. R. Gorman* 937
Mechanism of Inactivation of γ-Aminobutyric Acid Aminotransferase by (*S,E*)-4-Amino-5-fluoropent-2-enoic Acid *Richard B. Silverman and Cherian George* 942
Inhibition of Protein Synthesis by Aminoglycoside Antibiotics in Polyamine-Requiring Bacteria *H. G. Nastri and I. D. Algranati* 947
Fluoride Can Activate the Respiratory Burst Independently of Ca^{2+}, Stimulation of Phosphoinositide Turnover, and Protein Kinase C Translocation in Primed Human Neutrophils *Vittorina Della Bianca, Miroslawa Grzeskowiak, Stefano Dusi, and Filippo Rossi* 955
The Mechanism of Action of DuP 721, a New Antibacterial Agent: Effects on Macromolecular Synthesis *D. C. Eustice, P. A. Feldman and A. M. Slee* 965
Potential Anticoagulant Activity of Lipocortins and Other Calcium/Phospholipid Binding Proteins *Hugues Chap, Paul Comfurius, Edouard M. Bevers, Josette Fauvel, Patricia Vicendo, Louis Douste-Blazy, and Robert F. A. Zwaal* 972
$tRNA^{Phe}$ and $tRNA^{Pro}$ Are the Near-Ultraviolet Molecular Targets Triggering the Growth Delay Effect *M. O. Blondel and A. Favre* 979
Covalent Change in α Crystallin during Human Senile Cataractogenesis *L. Takemoto, D. Granstrom, T. Kodama, and R. Wong* 987
Active Site Model of Cytochrome *P*-450 LM2 *W. Schwarze, J. Jaeger, G. R. Jänig, and K. Ruckpaul* 996
Vimentin, a Cytoskeletal Substrate of Protein Kinase C *Chi-Kuang Huang, James F. Devanney, and Scott P. Kennedy* 1006
Nonenzymatic Inhibitors of Coagulation and Platelet Aggregation from *Naja nigricollis* Venom Are Cardiotoxins *R. Manjunatha Kini, Nancy C. Haar, and Herbert J. Evans* 1012
Solid Phase Synthesis of a GHRP Analog Containing C-terminal Thioamide Group *Zs. Majer, M. Zewdu, M. Hollósi, J. Seprödi, Zs. Vadász, and I. Teplán* 1017
Inositol 1,4,5-Trisphosphate-Induced Calcium Release from Platelet Plasma Membrane Vesicles *Appavoo Rengasamy and Harold Feinberg* 1021
Radiobrominated *m*-Tyrosine Analog as Potential CNS L-Dopa PET Tracer *O. T. De Jesus and J. Mukherjee* 1027
The Site of Action of Six Different Ribosome-Inactivating Proteins from Plants on Eukaryotic Ribosomes: The RNA N-Glycosidase Activity of the Proteins *Yaeta Endo, Kunio Tsurugi, and John M. Lambert* 1032
Quantitative Aspects of the Feeder Cell Phenomenon: Mechanistic Implications *Stephen B. Pruett and Johnathan L. Kiel* 1037
Electron Self-Exchange in Pseudomonas Cytochromes *Russell Timkovich, Ming Li Cai, and Dabney White Dixon* 1044
Properties of Structure and Interaction of the Receptor for ω-Conotoxin, a Polypeptide Active on Ca^{2+} Channels *Jacques Barhanin, Annie Schmid, and Michel Lazdunski* 1051

Effect of Fish Oils on Rat Plasma Lipoproteins
Daniel Belcher, William Stillwell, Carol A. Langsford, and Stephen R. Wassall 1063
Developmental and Sexual Differences of T-Kininogen Levels in Rat Plasma and Liver
Sachiko Oh-ishi, Izumi Hayashi, Atsushi Kusunoki, Yoshinao Nagashima, Masahiko Hayashi, Kohji Yamaki, Iku Utsunomiya, and Akiko Yamasu 1069
Feeding of Lovastatin to Rats Increases the Activity of the Hepatic Mitochondrial Outer Carnitine Palmitoyltransferase *George A. Cook, Bobby Khan, and Murray Heimberg* 1077
Sequence of the Signal Peptide for Rat Liver Mitochondrial Aldehyde Dehydrogenase
Jaume Farrés, Kun-Liang Guan, and Henry Weiner 1083
Inactivation of Fructose-1,6-bisphosphatase by *o*-Phthalaldehyde
Rajinder N. Puri and Robert Roskoski, Jr. 1088
Enrichment and Initial Characterization of the Solubilized Receptor for Mouse γ Interferon
Mark P. Hayes, Stephen W. Russell, Paul P. Trotta, and Mitali Basu 1096
Site-Specific Mutagenesis of the Human Interleukin-1β Gene: Structure–Function Analysis of the Cysteine Residues *Takashi Kamogashira, Yoshihiro Masui, Yasukazu Ohmoto, Tohru Hirato, Kenji Nagamura, Keiko Mizuno, Yoeng-Man Hong, Yoshikazu Kikumoto, Satoru Nakai, and Yoshikatsu Hirai* 1106
Effect of Phorbol Ester on Contractile Response of Aorta from Endotoxic Rats
Ichiro Wakabayashi, Eizo Kakishita, Katsuhiko Hatake, Shigeru Hishida, and Kiyoyasu Nagai 1115
Subcellular Distribution and Isoelectric Heterogeneity of the Substrate for ADP-Ribosyltransferase from *Clostridium botulinum* *Shuh Narumiya, Narito Morii, Kouji Ohno, Yasuhiro Ohashi, and Motohatsu Fujiwara* 1122
Distinction between Malignant and Normal Breast Tissue Based on Endogenous Mediators of Estradiol Binding *Jerry H. Fishman and Jack Fishman* 1131
1,25-Dihydroxyvitamin D_3 Stimulates Ca-ATPase in a Vascular Smooth Muscle Cell Line
Hiroyuki Kawashima 1138
Cyclic AMP Control of GTP Pools in *Saccharomyces cerevisiae* *Martin L. Pall* 1144
Thiol Exchange Reactions Involving Selenotrisulfides *T. Nakagawa, E. Aoyama, N. Kobayashi, H. Tanaka, M. Chikuma, H. Sakurai, and M. Nakayama* 1149
Giant Polypeptides of Skeletal Muscle Titin: Sedimentation Equilibrium in Guanidine Hydrochloride *Gary P. Kurzban and Kuan Wang* 1155
Rearrangement of Nuclear Calmodulin during Proliferative Liver Cell Activation
Joan Serratosa, M. Jesus Pujol, Oriol Bachs, and Ernesto Carafoli 1162
Specific Receptors for Thromboxane A_2 in Cultured Vascular Smooth Muscle Cells of Rat Aorta *Kohji Hanasaki, Kazumi Nakano, Hisanori Kasai, Hitoshi Arita, Kohichi Ohtani, and Masami Doteuchi* 1170
Insulin-Stimulated Serine Kinase in *Xenopus* Oocyte Plasma Membrane
Youichirou Sakanoue, Eikichi Hashimoto, Shun-ichi Nakamura, and Hirohei Yamamura 1176
Dissociation of c-*fos* from ODC Expression and Neuronal Differentiation in a PC12 Subline Stably Transfected with an Inducible N-*ras* Oncogene
Isabel Guerrero, Angel Pellicer, and David E. Burstein 1185
1,25-Dihydroxyvitamin D Stimulates Sodium-Dependent Phosphate Transport by Renal Outer Cortical Brush-Border Membrane Vesicles by Directly Affecting Membrane Fluidity *Makoto Suzuki, Yoshindo Kawaguchi, Mitsuo Momose, Takasi Morita, Keitarou Yokoyama, and Tadashi Miyahara* 1193
Identification of T-Kinin-Leu (T-Kinin-Containing Peptide) Released from T-Kininogen by Cathepsin D of Granulomatous Tissues in Rats *Wataru Sakamoto, Fumihiko Satoh, Shigeki Nagasawa, and Hiroshi Handa* 1199
Inhibition of Early Platelet-Derived Growth Factor Responses in BALB/c-3T3 Cells by Interferon *M. Zagari, J. R. Hepler, C. Harris, and B. Herman* 1207

(±)-*trans*-2-(3-Methoxy-5-methylsulfonyl-4-propoxyphenyl)-5-(3,4,5-trimethoxyphenyl) tetrahydrofuran (L-659,989), a Novel, Potent PAF Receptor Antagonist
Mitree M. Ponpipom, San-Bao Hwang, Thomas W. Doebber, John J. Acton, Alfred W. Alberts, Tesfaye Biftu, David R. Brooker, Robert L. Bugianesi, John C. Chabala, Nancy L. Gamble, Donald W. Graham, My-Hanh Lam, and Margaret S. Wu 1213

RU 486 Stabilizes a High Molecular Weight Form of the Glucocorticoid Receptor Containing the 90K Non-steroid Binding Protein in Intact Thymus Cells
Philippe Lefebvre, Pierre Formstecher, Claude Richard, and Michel Dautrevaux 1221

Proteose Peptone Enhances Production of Tissue-Type Plasminogen Activator from Human Diploid Fibroblasts *Akio Hasegawa, Hitoshi Yamashita, Shuhei Kondo, Takao Kiyota, Hiroshi Hayashi, Hideo Yoshizaki, Akira Murakami, Masami Shiratsuchi, and Toshihito Mori* 1230

Cloning and Sequence Analysis of a cDNA for Lymphocyte Proliferation Potentiating Factor of Rabbit Polymorphonuclear Leukocytes: Identification as Rabbit Interleukin 1β
Shunsuke Mori, Fumimasa Goto, Kumiko Goto, Susumu Ohkawara, Shuichiro Maeda, Kazunori Shimada, and Masaru Yoshinaga 1237

Three-α-Helical Coiled-Coil, as a Proposed Model for a Thin Rod Segment of Bacteriophage T3 Tail Fibers *Sho Takahashi and Tatsuo Ooi* 1244

Effect of Synthetic Human Cholecystokinin-33 on Exocrine Pancrease
Ryuichiro Doi, Kazutomo Inoue, Masafumi Kogire, Shoichiro Sumi, Mitsutoshi Yun, Shiroh Futaki, Nobutaka Fujii, Haruaki Yajima, and Takayoshi Tobe 1251

Perturbation of Intracellular pH by DIDS on Endocytosis of Transferrin and Iron Uptake in Rabbit Reticulocytes *R. Y. Y. Chan and T. T. Loh* 1256

Alzheimer's Disease Brain Extract Stimulates the Survival of Cerebral Cortical Neurons from Neonatal Rats *Yoko Uchida, Yasuo Ihara, and Masanori Tomonaga* 1263

Determination of Mechanisms of Myocardial Ischemic Injury by ^{31}P-MRS Effect of Cathecholamine on Ischemic Hearts *H. Sakai, M. Yoshiyama, M. Teragaki, K. Takeuchi, T. Takeda, M. Ikata, M. Ishikawa, and I. Miura* 1268

Cloning of cDNA Encoding a New Peptide C-Terminal α-Amidating Enzyme Having a Putative Membrane-Spanning Domain from *Xenopus laevis* Skin
Kazuhiro Ohsuye, Katsuhiko Kitano, Yayoi Wada, Kayoko Fuchimura, Shoji Tanaka, Kensaku Mizuno, and Hisayuki Matsuo 1275

α-Blocker, Bunazosinhydrochloride Decreases Cytosolic Ca^{2+} of Cultured Rat Aortic Smooth Muscle Cells *H. Orimo, M. Watanabe, and Y. Ouchi* 1282

Mannose 6-Phosphate/Insulin-like Growth Factor II Receptor: Distinct Binding Sites for Mannose 6-Phosphate and Insulin-like Growth Factor II
Thomas Braulke, Christa Causin, Abdul Waheed, Ulrich Junghans, Andrej Hasilik, Peter Maly, René E. Humbel, and Kurt von Figura 1287

Reduction of Iodonitrotetrazolium Violet by Superoxide Radicals
John J. Podczasy and Robert Wei 1294

Expression of the Insulinoma Gene *rig* during Liver Regeneration and in Primary Cultured Hepatocytes *Chiyoko Inoue, Kazuhiko Igarashi, Motoo Kitagawa, Kimio Terazono, Shin Takasawa, Ken-ichi Obata, Kazushi Iwata, Hiroshi Yamamoto, and Hiroshi Okamoto* 1302

The Role of Protein Kinase C on Amylase Secretion from Rat Parotid Gland
Hiromi Shimomura, Akane Terada, Yoshiaki Hashimoto, and Thomas R. Soderling 1309

ERRATA

Volume 148, Number 3, November 13, 1987: Michael J. Cronin, Tamie Malaska, and Charles Bakhit, "Human Relaxin Increases Cyclic AMP Levels in Cultured Anterior Pituitary Cells," pp. 1246–1251 1315

Volume 148, Number 3, November 13, 1987: Anthony R. Mire-Sluis, A. Victor Hoffbrand, and R. Gitendra Wickremasinghe, "Evidence That Guanine-Nucleotide Binding Regulatory Proteins Couple Cell-Surface Receptors to the Breakdown of Inositol-Containing Lipids during T-Lymphocyte Mitogenesis," pp. 1223–1231 1315

Author Index for Volume 150 1317

Volume 151, Number 1, February 29, 1988

AUTHOR INDEX, Volume 151, Number 1, February 29, 1988 iii

Fine Mapping of an Alzheimer Disease-Associated Gene Encoding β-Amyloid Protein *Edmund C. Jenkins, Evelyn A. Devine-Gage, Nikolaos K. Robakis, Xiu-Lan Yao, W. Ted Brown, George E. Houck, Jr., Gloria Wolfe, Narayanarao Ramakrishna, Wayne P. Silverman, and Henryk M. Wisniewski* 1

Complexes of Thrombin with Secreted Platelet Proteins *Joseph J. Miller, Paul C. Browne, and Thomas C. Detwiler* 9

Phorbol Esters Increase Adenylate Cyclase Activity and Stability in Pituitary Membranes *Stephen T. Summers, Jeffrey M. Walker, Julianne J. Sando, and Michael J. Cronin* 16

Nucleotide Sequence of the Maltohexaose-Producing Amylase Gene from an Alkalophilic *Bacillus* sp. #707 and Structural Similarity to Liquefying Type α-Amylases *Akira Tsukamoto, Kenji Kimura, Yasumasa Ishii, Toshiya Takano, and Kunio Yamane* 25

Isolation of Mutants of *Schizosaccharomyces pombe* Unable to Synthesize Cadystin, Small Cadmium-Binding Peptides *Norihiro Mutoh and Yukimasa Hayashi* 32

Prelysosomal Convergence of Autophagic and Endocytic Pathways *Paul B. Gordon and Per O. Seglen* 40

Glucose Metabolism via the Embden–Meyerhof Pathway Is Not Involved in ATP Production during Spore Germination of *Bacillus megaterium* QM B1551: A Study with a Mutant Lacking Hexokinase *Keiji Sano, Mieko Otani, and Chisae Umezawa* 48

Early Effects of Retinol and Retinoic Acid on Protein Synthesis in Retinol Deficient Rat Testes *Riaz ul Haq and Frank Chytil* 53

Insulin Induces Activation and Translocation of Protein Kinase FA (A Multifunctional Protein Phosphatase Activator) in Human Platelet *Shiaw-Der Yang, Low-Tone Ho, and Tung-Jing Fung* 61

^{31}P NMR Measurements of Myocardial pH *in Vivo* *Kevin M. Brindle, Bheeshma Rajagopalan, Donald S. Williams, John A. Detre, Elena Simplaceanu, Chien Ho, and George K. Radda* 70

Inhibition of Cathepsin *L*-Induced Degradation of Epidermal Growth Factor Receptors by c-Ha-*ras* Gene Products *Takaki Hiwasa, Shigeru Sakiyama, Shigeyuki Yokoyama, Jong-Myung Ha, Junko Fujita, Shigeru Noguchi, Yoshiaki Bando, Eiki Kominami, and Nobuhiko Katunuma* 78

The Preparation and Spectroscopic Characterization of a Weakly Self-Associating Salt of Guanylyl-(3′-5′)-Guanosine *Charles R. Toth and Judith A. Walmsley* 86

Prevention of the TPA-Mediated Down-Regulation of Protein Kinase C *Deborah S. Grove and Andrea M. Mastro* 94

Biosynthetic Pathways for the Le^b and Y Glycolipids in the Gastric Carcinoma Cell Line KATO III as Analyzed by a Novel Assay *Magdalena Blaszczyk-Thurin, Annikki Sarnesto, Jan Thurin, Ole Hindsgaul, and Hilary Koprowski* 100

Atriopeptin 2 Is Hydrolysed by Cardiac but Not Pulmonary Isozyme of Angiotensin-Converting Enzyme *I. Y. Sakharov, E. A. Dukhanina, A. S. Molokoedov, S. M. Danilov, M. V. Ovchinnikov, Zh. D. Bespalova, and M. I. Titov* 109

The Separation of *myo*-Inositol Phosphates by Ion-Pair Chromatography *James A. Shayman and Dawn M. BeMent* 114

Heterogeneity of Human Liver, Muscle, and Adipose Tissue Insulin Receptor *José F. Caro, S. M. Raju, Madhur K. Sinha, Ira D. Goldfine, and G. Lynis Dohm* 123

Enzymatic Formation and Chemical Synthesis of an Active Metabolite of 3β-Hydroxy-5α-Cholest-8(14)-en-15-one, a Potent Regulator of Cholesterol Metabolism *George J. Schroepfer, Jr., Hong-Seok Kim, Janice L. Vermilion, Thomas W. Stephens, Frederick D. Pinkerton, Dolores H. Needleman, William K. Wilson, and Jan St. Pyrek* 130

Paradoxical Stimulation of both Lipocortin and Prostaglandin Production in Human Amnion Cells by Dexamethasone *Murray D. Mitchell, Fiona D. Lytton, and Lyuba Varticovski* 137

Growth Hormone Dependent Stimulation of Osteoblast-like Cells in Serum-Free Cultures via Local Synthesis of Insulin-like Growth Factor I *M. Ernst and E. R. Froesch* 142

Impaired Immunological Surveillance by 7,12-Dimethylbenz[*a*]anthracene Augments Its Skin Tumorigenicity in C3H Mice *Craig A. Elmets, Wasiuddin A. Khan, Jay C. Klemme, and Hasan Mukhtar* 148

Simultaneous Observation of Positive and Negative Nuclear Overhauser Effects in Oligopeptides Due to Segmental Motion *K. Uma, H. Balaram, S. Raghothama, and P. Balaram* 153

Gelatinases of Metastatic Cell Lines of Murine Colonic Carcinoma as Detected by Substrate-Gel Electrophoresis *Sadako Yamagata, Yoshika Ito, Rie Tanaka, and Satoru Shimizu* 158

Stimulation of Aromatase Activity in Immature Porcine Leydig Cells by Fibroblast Growth Factor (FGF) *James I. Raeside, Marie-Claude Berthelon, Pascale Sanchez, and José M. Saez* 163

Evidence for Novel 30,000–50,000 M_r Cofactor in the Activation of Muscle *Jagdish Gulati and Árvind Babu* 170

The Na^+H^+ Antiporter Is Not Involved in Potentiation of Thrombin-Induced Responses by Epinephrine *Michael F. Crouch and Eduardo G. Lapetina* 178

Photoaffinity Labeling of Scorpion Toxin Receptors Associated with Insect Synaptosomal Na^+ Channels *Maria Elena de Lima, Francois Couraud, Bruno Lapied, Marcel Pelhate, Carlos Ribeiro Diniz, and Hervé Rochat* 187

Dissimilar Effects of 1-Oleoyl-2-acetylglycerol and Phorbol 12-Myristate 13-Acetate on Fatty Acid Synthesis in Isolated Rat-Liver Cells *C. Bijleveld, M. J. H. Geelen, M. Houweling, and W. J. Vaartjes* 193

Infection of Human Hematopoietic Progenitor Cells Using a Retroviral Vector with a Xenotropic Pseudotype *Martin A. Eglitis, Donald B. Kohn, Robert C. Moen, R. Michael Blaese, and W. French Anderson* 201

The Bovine Insulin-like Growth Factor (IGF) Binding Protein Purified from Conditioned Medium Requires the N-Terminal Tripeptide in IGF-1 for Binding *Laszlo Szabo, David G. Mottershead, F. John Ballard, and John C. Wallace* 207

GTP-Binding Proteins in a Cyanobacterium *Anabaena cylindrica* *Masayuki Ohmori, Kohji Hasunuma, and Kazuhiko Furukawa* 215

Hyaluronic Acid Synthesis and Secretion by Rat Liver Fat Storing Cells (Perisinusoidal Lipocytes) in Culture *Axel M. Gressner and Ralf Haarmann* 222

Expression of Erythroid Differentiation Factor (EDF) in Chinese Hamster Ovary Cells *Masahiro Murata, Kazuya Onomichi, Yuzuru Eto, Hiroshiro Shibai, and Masami Muramatsu* 230

Purification and Analysis of the Structure of α-Galactosidase from *Escherichia coli* *Yoshitaka Nagao, Tetsuya Nakada, Masanori Imoto, Tadashi Shimamoto, Shuzo Sakai, Masaaki Tsuda, and Tomofusa Tsuchiya* 236

Protein Phosphorylation and Activation of Human Platelets by Sodium Fluoride *Shun-ichi Nakamura, Tomoko Kobayashi, Shigeru Yanagi, and Hirohei Yamamura* 242

Direct Interaction between Membrane-Associated Nucleoside Diphosphate Kinase and GTP-Binding Protein(Gs), and Its Regulation by Hormones and Guanine Nucleotides *Narimichi Kimura and Nobuko Shimada* 248

Two Distinct Succinate Thiokinases in both Bloodstream and Procyclic Forms of *Trypanosoma brucei* *Timothy M. Jenkins, Robert Eisenthal, and P. David J. Weitzman* 257

Natural Abundance ^{13}C-NMR Study of Paramagnetic Horse Heart Ferricytochrome *c* Cyanide Complex: Assignment of Hyperfine Shifted Heme Methyl Carbon Resonances *Y. Yamamoto, N. Nanai, Y. Inoue, and R. Chûjô* 262

The *hyg* Gene Promoter from *Streptomyces hygroscopicus:* A Novel Form of *Streptomyces* Promoters
Diego Pulido, Magdalena Zalacaín, and Antonio Jiménez 270

Hypomethylation and Expression of Pepsinogen A Genes in the Fundic Mucosa of Human Stomach *Masao Ichinose, Kazumasa Miki, Masae Tatematsu, Chie Furihata, Masahiro Nobuhara, Yoshikazu Ichihara, Masao Tanji, Kazuhiro Sogawa, Yoshiaki Fujii-Kuriyama, Hiroshi Oka, Takayuki Takahashi, Takashi Kageyama, and Kenji Takahashi* 275

Leukotrienes Increase Glucose and Lactate Output and Decrease Flow in Perfused Rat Liver *Masaru Iwai and Kurt Jungermann* 283

Alkyl-linked Diglycerides Inhibit Protein Kinase C Activation by Diaclyglycerols
Larry W. Daniel, George W. Small, and Jeffrey D. Schmitt 291

TGF β Induces a Sustained c-*fos* Expression Associated with Stimulation or Inhibition of Cell Growth in EL2 or NIH-3T3 Fibroblasts
Elio Liboi, Paolo Di Francesco, Paola Gallinari, Ugo Testa, Giovanni B. Rossi, and Cesare Peschle 298

The 5′ Flanking Region of the Human pS2 Gene Mediates Its Transcriptional Activation by Estrogen in MCF-7 Cells *Margo Roberts, John Wallace, Jean-Marc Jeltsch, and Meera Berry* 306

In Vitro Biosynthesis of Two Human Galactosyltransferase Polypeptides
Ger J. Strous, Peter Van Kerkhof, and Eric G. Berger 314

The Effect of Iron Overload on the Mitochondrial Prophyrin Level in the Hexachlorobenzene Induced Experimental Porphyria
Alberto Masini, Tommaso Trenti, Daniela Ceccarelli, and Umberto Muscatello 320

Isolation of Heparan Sulfates with Antithrombin III Affinity and Anticoagulant Potency from BALB/c 3T3, B16.F10 Melanoma, and Cutaneous Fibrosarcoma Cell Lines
Michael Piepkorn, Peter Hovingh, and Wayne M. Hentschel 327

Desensitization to Norepinephrine Includes Refractoriness of Calcium Release in Myocardial Cells *Paul Erne and Kent Hermsmeyer* 333

Soybean Lipoxygenase-Catalyzed Oxidation by Linoleic Acid Hydroperoxide: Different Reducing Substrates and Dehydrogenation of Phenidone and BW 755C
D. Mansuy, C. Cucurou, B. Biatry, and J. P. Battioni 339

Prosomatostatin Processing in Anglerfish Brain, Gut, and Pancreas
Alain Morel, Paul F. M. Kuks, Julie Bourdais, and Paul Cohen 347

Phosphorylation of Platelet Actin Binding Protein Protects against Proteolysis by Calcium Dependent Sulfhydryl Protease
Zi Zhang, John Lawrence, and Alfred Stracher 355

Pertussis Toxin Pretreatment Abolishes Dihydropyridine Inhibition of Calcium Flux in the 235-1 Pituitary Cell Line *G. Schettini, O. Meucci, T. Florio, M. Grimaldi, E. Landolfi, G. Magri, and T. Yasumoto* 361

Isolation and Characterization of Insulin Receptors from Rat Kidney Glomeruli and Tubules *Jeong Hyok Im, Dennis J. Pillion, and Elias Meezan* 370

Identification of Novel Proteins Synthesized in Bone Cells by Antibody Screening of a cDNA Expression Library *Elka Nutt, Chris Dunwiddie, John W. Jacobs, and Ellen Simpson* 382

The cDNA of Cucumber Mosaic Virus-Associated Satellite RNA Has *in Vivo* Biological Properties *Mireille Jacquemond and Guy J.-M. Lauquin* 388

Inhibitor of Anion Transport, DIDS, Releases Ca^{2+} from Hepatic Microsomes
S. Kimura, B. C. Robison, and Naomi Kraus-Friedmann, with the assistance of Sandra Higham 396

Interferon-Induced Antiviral State Is Inhibited by Neomycin and Mimicked by Diacylglycerols
C. Cernescu, St. N. Constantinescu, F. Baltă, L. M. Popescu, and N. Cajal 402

Distinct Tissue Specific Mitochrondrial Creatine Kinases from Chicken Brain and Striated Muscle with a Conserved CK Framework *Johann P. Hossle, Jörg Schlegel, Gabriela Wegmann, Markus Wyss, Peter Böhlen, Hans M. Eppenberger, Theo Wallimann, and Jean-Claude Perriard* 408

Sulfation of Tyrosine Residues Doe Not Influence Secretion of α_2-Antiplasmin or C4 *Glen L. Hortin and James P. Graham* 417

Release of Oligosaccharides Possessing Reducing-End *N*-Acetylgalactosamine from Mucus Glycoprotein in *Streptomyces* sp. OH-11242 Culture Medium through Action of Endo-Type Glycosidase *Hitoo Iwase, Ikuko Ishii, Kazuhiko Ishihara, Yoshitake Tanaka, Satoshi Ōmura, and Kyoko Hotta* 422

Formation of Electrostatically-Stabilized Complex at Low Ionic Strength *Inhibits* Interprotein Electron Transfer between Yeast Cytochrome *c* and Cytochrome *c* Peroxidase *J. T. Hazzard, G. McLendon, M. A. Cusanovich, and G. Tollin* 429

Enhancement of Lectin-Induced Cap Formation in Human Neutrophils by Cyclosporin A *Patrick Soon-Shiong and Iqbal S. Grewal* 435

Evidence for a Ca^{2+} Channel within the Ryanodine Receptor Complex from Cardiac Sarcoplasmic Reticulum *F. Anthony Lai, Kristin Anderson, Eric Rousseau, Qi-Yi Liu, and Gerhard Meissner* 441

Strain-Specific Occurrence of Two Ornithine Decarboxylase Species in Mouse Kidney *Takako Kitani and Hitoshi Fujisawa* 450

1,2-Dioctanoyl-Glycerol Induces a Discrete but Transient Translocation of Protein Kinase C as well as the Inhibition of MCF-7 Cell Proliferation *Marc Issandou and Jean-Marie Darbon* 458

A Soluble Angiotensin II-Binding Protein from Rabbit Liver *Elizabeth Rosenberg, M. A. Ravi Kiron, and R. L. Soffer* 466

Evidence for a Na^+/H^+ Antiport in Stomach Smooth Muscle Cells *Trevor J. Finkle and A. K. Grover* 473

Partial Characterization of a Low Molecular Weight Proteoglycan Isolated from Bovine Parietal Pericardium *Dan Simionescu, Robert Alper, and Nicholas A. Kefalides* 480

A Method for Specific Cloning and Sequencing of a Human HPRT cDNA for Mutation Analysis *D. Simpson, R. M. Crosby, and T. R. Skopek* 487

Formation and Metabolism of Hepoxilin A3 by the Rat Brain *Cecil R. Pace-Asciak* 493

A New Facile Trinitrophenylated Substrate for Peptide α-Amidation and Its Use to Characterize PAM Activity in Chromaffin Granules *Andreas G. Katopodis and Sheldon W. May* 499

Photodynamic Toxicity of Porphyrins and Chlorins for a Human Tumor Cell Line: Combined Light and Concentration Dose Responses for the Retained Fraction *W. L. Nourse, R. M. Parkhurst, W. A. Skinner, and R. T. Jordan* 506

Biosynthesis of Biopterin: Studies on the Mechanism of 6-Pyruvoyltetrahydropteridine Synthase *Quang Le Van, Gerd Katzenmeier, Bruno Schwarzkopf, Cornelia Schmid, and Adelbert Bacher* 512

Demonstration of Histamine H_2 Receptors on Human Melanoma Cells *R. J. Whitehead, D. J. Taylor, J. M. Evanson, I. R. Hart, and D. E. Woolley* 518

The Glycopeptide Moiety of Vasopressin–Neurophysin Precursor Is Neurohypophysial Prolactin Releasing Factor *György Nagy, J. Jeffrey Mulchahey, Derek G. Smyth, and Jimmy D. Neill* 524

Epidermal Growth Factor (EGF) Produces Inositol Phosphates and Increases Cytoplasmic Free Calcium in Cultured Porcine Thyroid Cells *Nobuyuki Takasu, Mika Takasu, Takashi Yamada, and Yoshifusa Shimizu* 530

Processing of the Human IM-9 Lymphoblast Substance P Receptor: Biosynthetic and Degradation Studies Using a Monoclonal Anti-Receptor Antibody *Michele L. Organist, Jeanne P. Harvey, Joseph P. McGillis, and Donald G. Payan* 535

Stimulus-Dependent Inhibition of Platelet Aggregation by the Protein Kinase C Inhibitors Polymyxin B, H-7, and Staurosporine
Christoph Schächtele, Roland Seifert, and Hartmut Osswald 542
Differential Inhibition of Mitogen Induced T Cell Proliferation by 5-Azacytidine and Cytosine-Arabinoside *Konrad Schauenstein, Kathrin Rossi, and Adam Csordas* 548
Haloketone Transition State Analog Inhibitors of Cholesterol Esterase
Julie Sohl, Larry D. Sutton, Donald J. Burton, and Daniel M. Quinn 554
Yeast cAMP-Dependent Protein Kinase Can Be Associated to the Plasma Membrane
M. Margarita Behrens and María J. Mazón 561
Use of Rhodamine 123 to Investigate Alterations in Mitochondrial Activity in Isolated Mouse Liver Mitochondria *Jose Enrique O'Connor, Jose Luis Vargas, Bruce F. Kimler, Jose Hernandez-Yago, and Santiago Grisolia* 568
Transcription Interruption May Be a Common Mechanism of c-*myc* Regulation during HL-60 Differentiation *S. Spence McCachren, Jr., Zahra Salehi, J. Brice Weinberg, and James E. Niedel* 574
Amiloride Sensitive Activation of S_6-Kinase by Angiotensin II in Cultured Vascular Smooth Muscle Cells *Timothy Scott-Burden, Thérèse J. Resink, Ursula Baur, Maria Bürgin, and Fritz R. Bühler* 583
The Role of Calpain in the Selective Increased Phosphorylation of the Anion-Transport Protein in Red Cell of Hypertensive Subjects *S. Pontremoli, B. Sparatore, F. Salamino. R. De Tullio, R. Pontremoli, and E. Melloni* 590
Modulation of Expression of the Human Interferon-γ Gene in *Escherichia coli* by Site-Directed Mutagenesis *S. G. Lee, George A. Ricca, Gregg Crumley, R. Stephen Lloyd, and William Drohan* 598
Unusual Structural Features of 2′,3′-Dideoxycytidine, and Inhibitor of the HIV (AIDS) Virus *George I. Birnbaum, Tai-Shun Lin, and William H. Prusoff* 608
Neuronal TRH Synthesis: Developmental and Circadian TRH mRNA Levels
L. Covarrubias, R. M. Uribe, M. Méndez, J. L. Charli, and P. Joseph-Bravo 615
Electrophoretically Monodisperse Cytochrome *c* Oxidases
Marc Heinrichs and Gerhard Buse 623
ERRATA
Volume 149, Number 3, December 31, 1987: V. C. Gandhi and D. H. Ross, "A Novel Kappa Agonist Inhibits [^{3}H]Nimodipine Binding to a Ca^{++} Channel Receptor Protein in Rat Brain," pp. 1042–1048 630
Volume 150, Number 1, January 15, 1988: Ralf Bützow, Marja-Liisa Huhtala, Hans Bohn, Ismo Virtanen, and Markku Seppälä, "Purification and Characterization of Placental Protein 5," pp. 483–490 631
Volume 150, Number 1, January 15, 1988: Shiro Urano, Keiko Yano, and Mitsuyoshi Matsuo, "Membrane-Stabilizing Effect of Vitamin E: Model Compounds on Fluidity of Lecithin Liposomes," pp. 469–475 631

Volume 151, Number 2, March 15, 1988

AUTHOR INDEX, Volume 151, Number 2, March 15, 1988 ii
A Protein Phosphotyrosine Phosphatase Distinct from Alkaline Phosphatase with Activity against the Insulin Receptor *H. V. Strout, P. P. Vicario, R. Saperstein, and E. E. Slater* 633
Zymosan but Not Phorbol Myristate Acetate Induces an Oxidative Burst in Rat Bone Marrow-Derived Macrophages *Pascale Andre, Christian Capo, Jean-Louis Mege, Anne Marie Benoliel, and Pierre Bongrand* 641
Catalysis of Lipid Peroxidation by Glucose and Glycosylated Collagen
Mark Hicks, Leigh Delbridge, Dennis K. Yue, and Tom S. Reeve 649

Isolation of Two Neuropeptides in the AKH/RPCH-Family from Horseflies *(Diptera)*
Howard Jaffe, Ashok K. Raina, Blair A. Fraser, Pamela Keim, K. Ranga Rao, Yao-Shi Zhang, J. L. Lancaster, and Dora K. Hayes 656

Enkephalin Precursor Gene Expression in Postmeiotic Germ Cells
Kazuaki Yoshikawa and Takako Aizawa 664

Site-Directed Mutagenesis of the α Subunit of Tryptophan Synthase from *Salmonella typhimurium*
Syed Ashrafuddin Ahmed, Haruhiko Kawasaki, Ronald Bauerle, Hatsué Morita, and Edith Wilson Miles 672

Interactions of Adriamycin with a Calcium Binding Site
Robert G. Canada, William Saway, and Errol Thompson 679

A Method for Fixation of Elastin Demonstrated by Stress/Strain Characterization
Dan W. Urry, Bryant Haynes, Dara Thomas, and R. Dean Harris 686

Buffers for the Reconstitution of Aspartate Aminotransferase
Joseph L. Lambing, Lance C. Foster, David J. Kearney, Mark R. Barnes, Tuongvan T. Tran, and Bob In-yu Yang 693

Stabilizing Basic Fibroblast Growth Factor Using Protein Engineering
Masaharu Seno, Reiko Sasada, Makoto Iwane, Katsuichi Sudo, Tsutomu Kurokawa, Kumiko Ito, and Koichi Igarashi 701

Inactivation of Bovine Thrombin by Water-Soluble Carbodiimides: The Essential Carboxyl Group Has a pK_a of 5.51
Vivien W. F. Chan, Anne M. Jorgensen, and C. L. Borders, Jr. 709

Synergism between Vasopressin and Phorbol Esters in Stimulation of Insulin Secretion and Phosphatidylcholine Metabolism in RIN Insulinoma Cells
Marie E. Monaco, Brian L. Levy, and Stephen B. Richardson 717

Suppression of Gastric Ulcer Induced by Stress and HCl-Ethanol by Intravenously Administered Metallothionein-II
Tsutomu Mimura, Kazutake Tsujikawa, Naohiro Yasuda, Hiroshi Nakajima, Munetada Haruyama, Takao Ohmura,and Masaru Okabe 725

Presence of Specific Binding Sites for Platelet-Activating Factor (PAF) in Brain
M. T. Domingo, B. Spinnewyn, P. E. Chabrier, and P. Braquet 730

Heme Regulates Cytochrome *P*-450 Gene Transcription Elongation
G. Jayarama Bhat and G. Padmanaban 737

Binding of C3 Molecules to Membranes via the SH-Residue Generated by the Cleavage of a Thioester Bond Can Initiate Complement Activation
Noriko Okada, Tatsuji Yasuda, and Hidechika Okada 743

Viruslike Particles Containing Knob-Associated Histidine-Rich Protein Are Secreted into the Culture Medium of *Plasmodium falciparum in Vitro* Cultures
R. Lenstra, A. Samso, B. Andrieu, J. Le Bras, and F. Galibert 749

Cloning of cDNA Encoding Human H-Protein, a Constituent of the Glycine Cleavage System
Koichi Hiraga, Shigeo Kure, Masayuki Yamamoto, Yoshihisa Ishiguro,and Tamio Suzuki 758

Tight Binding of Glucocorticoid-Receptor Complexes to Histone-Agarose
Kiyotaka Ueda, Fumihide Isohashi, Kazuki Okamoto, Ikuo Kokuhu, Kotohiko Kimura, Kunihiko Yoshikawa, and Yukiya Sakamoto 763

Electric Field Effects on the Virus M13, Detected by Electro-Optical Measurements
Rudolf M. Duenki and Gerhard Schwarz 768

Synaptosomal Calcium Influx Is Activated by Sodium Fluoride
Richard S. Jope and Kathleen M. Lally 774

Short-Term Regulation of Carnitine Palmitoyltransferase Activity in Isolated Rat Hepatocytes
Manuel Guzmán and Math J. H. Geelen 781

Biochemical Genetic Analysis of 2′,3′-Dideoxyadenosine Metabolism in Human T Lymphocytes
Dennis A. Carson, Tomasz Haertle, D. Bruce Wasson, and Douglas D. Richman 788

Chemotactic Factor Induced Tyrosine Phosphorylation of Membrane Associated Proteins in Rabbit Peritoneal Neutrophils
Chi-Kuang Huang, Gary R. Laramee, and John E. Casnellie 794

Specific Activation by Concanavalin A of the Superoxide Anion Generation Capacity during U937 Differentiation *Jesús Balsinde and Faustino Mollinedo* 802
T-2 Toxin Inhibits Mitochondrial Function in Yeast *Heather Koshinsky, Sandra Honour, and George Khachatourians* 809
Differential Regulation of Insulin-like Growth Factor-II Receptors in Rat Hepatocytes and Hepatoma Cells *Carolyn D. Scott, Jane E. Taylor, and Robert C. Baxter* 815
Development of Immunoreagents to Ciliary Zonules That React with Protein Components of Elastic Fiber Microfibrils and with Elastin-Producing Cells *Robert P. Mecham, Aleksander Hinek, Edward G. Cleary, Umberto Kucich, S. J. Lee, and Joel Rosenbloom* 822
Cathepsin L—A Latent Proteinase in Guinea Pig Sperm *J. Ken McDonald and Saloumeh Kadkhodayan* 827
Intracellular Calcium Rise Produced by Platelet-Activating Factor Is Deactivated by fMet-Leu-Phe and This Requires Uninterrupted Activation Sequence: Role of Protein Kinase C *T. F. P. Molski, W. Tao, E. L. Becker, and R. I. Sha'afi* 836
Effect of Endotoxin on the Rat Colon Glutathione Level *M. F. Chen, L. T. Chen, and H. W. Boyce, Jr.* 844
Induction of a Latency Period in the Time-Course of Phospholipase A_2 Action on Dipalmitoylphosphatidylcholine Liposomes in the Gel Phase *Marco T. González-Martínez and Marta S. Fernández* 851
Swainsonine, an Inhibitor of Glycoprotein Processing, Enhances Mitogen Induced Interleukin 2 Production and Receptor Expression in Human Lymphocytes *Terry L. Bowlin and Prasad S. Sunkara* 859
^{31}P-MRS Study of Bio-Energy Recovering Phenomenon *M. Yoshiyama, H. Sakai, M. Teragaki, K. Takeuchi, T. Takeda, M. Ikata, M. Ishikawa, and I. Miura* 865
Mitochondrial Urea Cycle Enzymes in Rats Treated with Sodium Benzoate *J. P. Colombo, C. Bachmann, U. Pfister, and M. Gradwohl* 872
Some Characteristics of Cyclic Photophosphorylation in Maize Bundle Sheath Chloroplasts *Margareta Baltscheffsky, Pål Nyrén, Åke Strid, and Alauddin Pramanik* 878
Structure Determination of a Human Lymphocyte Derived Neutrophil Activating Peptide (LYNAP) *Harry Gregory, Janice Young, Jens-M. Schröder, Ulrich Mrowietz, and Enno Christophers* 883
Sensory Transduction in Bacterial Chemotaxis Involves Phosphotransfer between Che Proteins *David Wylie, Ann Stock, Cing-Yuen Wong, and Jeff Stock* 891
Interaction of 1-Methyl-4-phenylpyridinium Ion with Human Platelets *Trent D. Buckman, Ruth Chang, Mary S. Sutphin, and Samuel Eiduson* 897
Transthyretin Is Synthesized in the Mammalian Eye *Robert L. Martone, Joseph Herbert, Andrew Dwork, and Eric A. Schon* 905
Dopaminergic Reduction of Intracellular Calcium: The Role of Calcium Influx *Ivan S. Login, Allan M. Judd, and Robert M. MacLeod* 913
Neuropeptide Y Receptor–Effector Coupling Mechanisms in Cultured Vascular Smooth Muscle Cells *Elwood E. Reynolds and Shinji Yokota* 919
Sequence of the Genes for the β and ε Subunits of the ATP Synthase of *Bacillus megaterium* QM B1551 *C. Ann Hawthorne and William S. A. Brusilow* 926
Functional Cholesteryl Binding Agents: Evaluation of Viability and Specificity of Antibodies Bound to Modified Phospholipid Vesicles *Timothy R. Carroll, Alan Davison, and Alun G. Jones* 932
Pharmacology and Molecular Identification of Vasoactive Intestinal Peptide (VIP) Receptors in Normal and Cancerous Gastric Mucosa in Man *C. Gespach, W. Bawab, E. Chastre, S. Emami, N. Yanaihara, and G. Rosselin* 939

Effect of Arginine and Glucagon on Perifused Purified β Cells
Madhukar S. Bandisode 948

ERRATA

Volume 150, Number 2, January 29, 1988: Alejandro Arellano, Mauricio Canales, Carolina Jullian, and Juan E. Brunet, "Fluorescence Studies on Clupein Protamines: Evidence for Globular Conformation," pp. 633–639 954

Volume 150, Number 2, January 29, 1988: Yoichi Kondo, Keiko Torii, Satoshi Omura, and Zen Itoh, "Erythromycin and Its Derivatives with Motilin-like Biological Activities Inhibit the Specific Binding of ^{125}I-Motilin to Duodenal Muscle," pp. 877–882 954

Volume 150, Number 2, January 29, 1988: Toshiya Osada, Nobuhiro Noro, Yoichiro Kuroda, and Atsushi Ikai, "Antibodies against Viral Proteins Can Be Produced Effectively in Response to the Increased Uptake of α_2-Macroglobulin: Viral Protein Conjugate by Macrophages," pp. 883–889 955

Volume 150, Number 2, January 29, 1988: N. R. Pattinson, "Identification of a Phosphatidylcholine Active Phospholipase C in Human Gallbladder Bile," pp. 890–896 955

Volume 151, Number 3, March 30, 1988

AUTHOR INDEX, Volume 151, Number 3, March 30, 1988 iii

Internalization and Degradation of Heparin Binding Growth Factor-I by Endothelial Cells *Robert Friesel and Thomas Maciag* 957

Cloned *hst* Gene from Normal Human Leukocyte DNA Transforms NIH3T3 Cells
Hiromi Sakamoto, Teruhiko Yoshida, Megumi Nakakuki, Hiroki Odagiri, Kiyoshi Miyagawa, Takashi Sugimura, and Masaaki Terada 965

The Heterogeneity of Protein Kinase C in Various Rat Tissues
Yoshiyuki Kosaka, Kouji Ogita, Katsuhiko Ase, Hideaki Nomura, Ushio Kikkawa, and Yasutomi Nishizuka 973

An Improved Electrotransfection Method Using Square Shaped Electric Impulsions
Francoise Presse, Anne Quillet, Lluis Mir, Carmen Marchiol-Fournigault, Jean Feunteun, and Didier Fradelizi 982

Aspirin Prevents the Nonenzymatic Glycosylation and Carbamylation of the Human Eye Lens Crystallins *in Vitro* *Gadiparthi N. Rao and Edward Cotlier* 991

Cyclosporin A Inhibits Proteolytic Cleavage and Degradation of Membrane-Bound Protein Kinase C in Hepatocytes after Stimulation by Phorbol Ester
A. A. vonRuecker, G. Rao, and F. Bidlingmaier 997

Heterogeneous Glycosylation of *Musca domestica* Arylphorin
O. Marinotti, L. R. Nunes, and A. G. de Bianchi 1004

Isolation and Characterization of Insulin-like Growth Factor-II from Human Bone
Charles A. Frolik, Lee F. Ellis, and Daniel C. Williams 1011

The Human Placenta as a Target Tissue for Glucagon
Rina Perlman, Camal Halabi, Tova Bick, and Zeev Hochberg 1019

The Effects on Tubulin Polymerization and Associated Guanosine Triphosphate Hydrolysis of Aluminum Ion, Fluoride, and Fluoroaluminate Species
W. Griffith Humphreys and Timothy L. Macdonald 1025

Phosphate Modification of Fructose-1,6-bisphosphate Aldolase in *Escherichia coli*
Jorge Babul and Dan G. Fraenkel 1033

The Potency of Fluorinated Ether Anesthetics Correlates with Their ^{19}F Spin–Spin Relaxation Times in Brain Tissue *Alex S. Evers, Joanna C. Haycock, and D. Andre d'Avignon* 1039

Role of Associated and Covalently Bound Lipids in Salivary Mucin Hydrophobicity: Effect of Proteolysis and Disulfide Bridge Reduction
B. L. Slomiany, V. L. N. Murty, J. Sarosiek, J. Piotrowski, and A. Slomiany 1046

In Situ Evidence for the Involvement of Superoxide Anions in Cutaneous Porphyrin Photosensitization *Mohammad Athar, Hasan Mukhtar, Craig A. Elmets, M. Tarif Zaim, Jenifer R. Lloyd, and David R. Bickers* 1054

Type V Collagen Selectively Inhibits Human Endothelial Cell Proliferation *Katsunori Fukuda, Yasuko Koshihara, Hiromi Oda, Masaru Ohyama, and Toshiro Ooyama* 1060

Chemical Modification of Rat Cerebral Cortex M1 Muscarinic Receptors: Role of Histidyl Residues in Antagonist and Agonist Binding *Chris J. van Koppen and Mordechai Sokolovsky* 1069

Transfer of Spores, Bacteria, and Yeast into Toluene Containing Phospholipids and Low Amounts of Water: Preservation of the Bacterial Respiratory Chain *Alberto Darszon, Edgardo Escamilla, Armando Gómez-Puyou, and Marietta Tuena de Gómez-Puyou* 1074

Identification of a Receptor for Calcitonin Gene-Related Peptides I and II in Human Cerebellum *S. Dotti-Sigrist, W. Born, and J. A. Fischer* 1081

An Endogenous Regulator of Diacylglycerol Kinase *Ingming Jeng, Nancy Klemm, and Cuizhen Wu* 1088

Effect of Tetraphenylboron on the Calcium-Dependent ATPase Activity of Sarcoplasmic Reticulum *F. Soler, F. Fernandez-Belda, and J. C. Gomez-Fernandez* 1093

Activin Stimulates Secretion of Follicle-Stimulating Hormone from Pituitary Cells Desensitized to Gonadotropin-Releasing Hormone *Ralph H. Schwall, Eva Szonyi, Anthony J. Mason, and Karoly Nikolics* 1099

Anomalous Insulin-Binding Activity in the Bovine Neural Retina: A Possible Mechanism for Regulation of Receptor Binding Specificity *Robert J. Waldbillig and Gerald J. Chader* 1105

Calcitonin Gene-Related Peptide Receptor in Cultured Vascular Smooth Muscle and Endothelial Cells *Yukio Hirata, Yasuyuki Takagi, Shoichiro Takata, Yuka Fukuda, Hiroki Yoshimi, and Takuo Fujita* 1113

Possible Involvement of 1α,25-Dihydroxyvitamin D_3 in Proliferation and Differentiation of 3T3-L1 Cells *Yoshihiko Ishida, Hiroshi Taniguchi, and Shigeaki Baba* 1122

Free and Small Peptide-Bound [^{14}C]Hydroxyproline Synthesis in Rat Liver *in Vitro* in CCl_4-Induced Hepatic Fibrosis *Masahiko Koda, Yoshikazu Murawaki, and Chisato Hirayama* 1128

Two Major Isozymes of the Protein D-Aspartyl/L-Isoaspartyl Methyltransferase from Human Erythrocytes *Irene M. Ota, Joanna M. Gilbert, and Steven Clarke* 1136

Protein Kinase C in the Regenerating Rat Liver *Yasuyuki Okamoto, Kimio Nishimura, Masaki Nakayama, Masanori Nakagawa, and Hiroshi Nakano* 1144

Different Processing of Alzheimer's β-Protein Precursor in the Vessel Wall of Patients with Hereditary Cerebral Hemorrhage with Amyloidosis-Dutch Type *Frances Prelli, Eduardo M. Castaño, Sjoerd G. van Duinen, Gerard Th. A. M. Bots, Willem Luyendijk, and Blas Frangione* 1150

Sequence Analysis of the Nonsteroid Binding Component of the Calf Uterine Estrogen Receptor *Thomas Ratajczak, Martine J. Brockway, Roland Hähnel, R. L. Moritz, and R. J. Simpson* 1156

Dibutyryl cAMP Induction of Type II 5'-Deiodinase Activity in Rat Brain Astrocytes in Culture *Jack L. Leonard* 1164

5-Hydroxymethylcytosine DNA Glycosylase Activity in Mammalian Tissue *Susan V. Cannon, Archie Cummings, and George W. Teebor* 1173

The Synergistic Cytocidal Effect Produced by Immune Interferon and Tumor Necrosis Factor in HT-29 Cells Is Associated with Inhibition of rRNA Processing and (2',5')-Oligo(A) Activation of RNase L *Mrunal S. Chapekar and Robert I. Glazer* 1180

A Pancreatic-Type Phospholipase A_2 in Rat Gastric Mucosa *Hiromasa Tojo, Takashi Ono, and Mitsuhiro Okamoto* 1188

IGF-I Increases c-*fos* Expression in FRTL5 Rat Thyroid Cells by Activating the c-*fos* Promoter *Giuseppe Damante, Fred Cox, and Basil Rapoport* 1194

Extraction of Phosphorylated Sperm Specific Histone H1 from Sea Urchin Eggs: Analysis of Phosphopeptide Maps *Donald C. Porter and Victor D. Vacquier* 1200

The Rapid Desensitization of Receptors for Platelet Derived Growth Factor, Bradykinin, and ATP: Studies on Individual Cells Using Quantitative Digital Video Fluorescence Microscopy *Fernando A. Gonzalez, Leon A. Heppel, David J. Gross, Watt W. Webb, and Gregory Parries* 1205

Specific [^{3}H]Propionyl-Neuropeptide Y (NPT) Binding in Rabbit Aortic Membranes: Comparisons with Binding in Rat Brain and Biological Responses in Rat Vas Deferens *Raymond S. L. Chang, Victor J. Lotti, and Tsing-Bau Chen* 1213

Dynorphin A (1–13) Peptide NH Groups Are Solvent Exposed: FT-IR and 500 MHz ^{1}H NMR Spectroscopic Evidence *V. Renugopalakrishnan, R. S. Rapaka, S.-G. Huang, S. Moore, and T. B. Hutson* 1220

Effect of the 90 kDa Heat Shock Protein, HSP90, on Glucocorticoid Receptor Binding to DNA-Cellulose *Kathryn J. Howard and Clark W. Distelhorst* 1226

Pattern of Recognition of DNA by Mammalian DNA Topoisomerase II *Philippe Fosse, Claude Paoletti, and Jean-Marie Saucier* 1233

Light Mitochondria and Cellular Thermogenesis *F. Goglia, G. Liverini, A. Lanni, S. Iossa, and A. Barletta* 1241

Agonist-Induced Changes of Platelet Tubulin Phosphorylation *S. Berry, D. Dawicki, and M. Steiner* 1250

1-*O*-Hexadec-1′-enyl-2-acetyl-*sn*-glycero-3-phosphocholine and Its Biological Activity *Reiko Nakayama, Katsuhiko Yasuda, Kiyosi Satouchi, and Kunihiko Saito* 1256

Possible Mechanism of Regulating Adenylate Cyclase Activity in Adipocyte Membranes from Exercise-Trained Male Rats *Tetsuya Izawa, Takao Komabayashi, Shouhachiro Shinoda, Kazuhiro Suda, Minoru Tsuboi, and Eizi Koshimizu* 1262

Chronic Stimulation of Human Fetal Pancreas with Phorbol Inhibits Insulin Secretion *Bernard E. Tuch, Katrina J. Osgerby, and John R. Turtle* 1269

A Monoclonal Antibody against N-Terminus of α-Atrial Natriuretic Polypeptide (α-ANP): A Useful Tool for Preferential Detection of Naturally Circulating ANP *Masashi Mukoyama, Kazuwa Nakao, Takayuki Yamada, Hiroshi Itoh, Akira Sugawara, Yoshihiko Saito, Hiroshi Arai, Kiminori Hosoda, Gotaro Shirakami, Narito Morii, Shozo Shiono, and Hiroo Imura* 1277

Synthesis of Porcine C5a Anaphylatoxin by the Solution Procedure and Confirmation of the Reported Structure *Naoyoshi Chino, Shigeru Kubo, Yuji Nishiuchi, Shin-ichiro Kumagaye, Kumiko Yoshizawa Kumagaye, Michihiro Takai, Terutoshi Kimura, and Shumpei Sakakibara* 1285

Differential Coupling of Smooth Muscle and Liver Vasopressin (V1) Receptors to Guanine Nucleotide Binding Proteins *Donna Bielinski, Michael McCrory, Michael Cahill, Peter Polgar, and Jordan B. Fishman* 1293

Glucose-Induced Oscillations of Cytoplasmic Ca^{2+} in the Pancreatic β-Cell *Eva Grapengiesser, Erik Gylfe, and Bo Hellman* 1299

A Peplomycin-Supersensitive Cell Line Lacking Activation of Poly(Adenosine Diphosphate Ribose) Synthetase by Peplomycin *Shogo Ozawa, Hideo Suzuki, Hiroshi Yamaki, Toshio Nishimura, and Nobuo Tanaka* 1305

cDNA Cloning and Sequencing of a New Gene Intensely Expressed in Early Differentiation Stages of Embryonal Carcinoma Cells and in Mid-gestation Period of Mouse Embryogenesis *Kenji Kadomatsu, Mineko Tomomura, and Takashi Muramatsu* 1312

Formation of Porphyrin π-Cation Radical in Myoglobin: A Study on One Electron Oxidation Product of Nickel(II)-Substituted Hemoproteins *Isao Morishima, Motoru Takeda, and Kikuo Takatera* 1319

Oxidation of the 2-Hydroxyamino Derivative of 2-Amino-6-methlydipyrido[1,2-*a*:3′,2′-*d*]imidazole (Glu-P-1) to Its 2-Nitroso Form, an Ultimate Form Reacting with Hemoglobin Thiol Groups *Atsushi Umemoto, Yasumasa Monden, Mitsuhito Tsuda, Spiros Grivas, and Takashi Sugimura* 1326

Substrate Specificity of Ca^{2+}/CaM-Dependent Multifunctional Protein Kinases: Comparison of Isoenzymes from Brain, Liver, and Skeletal Muscle
S. Shenolikar, J. Langston, C. M. Schworer, and P. T. Kelly 1332

An Australian Halobacterium Contains a Novel Proton Pump Retinal Protein: Archaerhodopsin *Yasuo Mukohata, Yasuo Sugiyama, Kunio Ihara, and Manabu Yoshida* 1339

Accumulation of Processing Intermediates of the *RAS2* Protein in Strain 112 of *Saccharomyces cerevisiae* *Diego Breviario, Maurizio Baroni, and Ravi Dhar* 1346

Identification of Thromboxane A_2 Receptor in Cultured Vascular Endothelial Cells of Rat Aorta *Kohji Hanasaki, Kazumi Nakano, Hisanori Kasai, Hidetake Kurihara, and Hitoshi Arita* 1352

Solubilization of Membrane-Bound Acid α-Glucosidase by Proteolysis
Akihiko Tsuji and Yoshiyuki Suzuki 1358

cDNA Cloning of Esterase 1, the Major Esterase Activity in Mouse Plasma
Thomas L. Genetta, Peter D'Eustachio, Susan S. Kadner,and Thomas H. Finlay 1364

The Effect of a Clostridium Perfringens 8-6 Enterotoxin on Viability and Macromolecular Synthesis in Vero Cells *James A. Lindsay* 1371

Partial Purification of 2,3-Oxidosqualene-lanosterol Cyclase from Hog Liver: Evidence for a Functional Thiol Residue *Albert Duriatti and Francis Schuber* 1378

The Infusion of Trieicosapentaenoylglycerol into Humans and the *in Vivo* Formation of Prostaglandin I_3 and Thromboxane A_3 *T. Hamazaki, S. Fischer, H. Schweer, C. O. Meese, M. Urakaze, A. Yokoyama, and S. Yano* 1386

5-Azacytidine Induced Inhibition of Mitogenic Response by Agents That Activate or Augment Activation of Human Peripheral Blood T Lymphocytes
Yasuhiro Deguchi, Shigeru Negoro, Hideki Hara, and Susumu Kishimoto 1395

Induction of Histidine Decarboxylase of Rat Basophilic Leukemia (2H3) Cells Stimulated by Higher Oligomeric IgE or Phorbol Myristate Acetate
Kazutaka Maeyama, Yoshitaka Taguchi, Masayuki Sasaki, Hiroshi Wada, Michael A. Beaven, and Takehiko Watanabe 1402

The Effect of Inosine on the Post Ischemic Heart as Bioenergy Recovering Factor in ^{31}P MRS *M. Yoshiyama, H. Sakai, M. Teragaki, K. Takeuchi, T. Takeda, M. Ikata, M. Ishikawa, and I. Miura* 1408

Rat Liver Insulin Mediator Which Stimulates Pyruvate Dehydrogenase Phosphatase Contains Galactosamine and D-Chiroinositol
Joseph Larner, Laura C. Huang, Charles F. W. Schwartz, Allison S. Oswald, Tsung-Ying Shen, Michael Kinter, Ghouzi Tang, and Konrad Zeller 1416

Monoclonal Antibodies Specific for Nonglycosylated Porcine Prolactin and for Pituitary Porcine Prolactin *Mitchell G. Scott, Wayne H. Lin, Leon R. Lyle, Paul R. Atkinson, James E. Seely, and Edith Markoff* 1427

Early Abnormal Development of Calmodulin Gene Expression and Calmodulin-Resistant Ca^{2+}-ATPase Activity in Avian Dystrophic Muscle
Harshad R. Thacore, Philip K. Kibler, Michael S. Hudecki, Jose Galindo, Jr., Faith B. Davis, Paul J. Davis, Catherine M. Pollina, Susan D. Blas, and Marion Schoenl 1434

Bioalkylation and Biooxidation of Anthracene, *in Vitro* and *in Vivo*
Steven R. Myers, Jerry W. Blake, and James W. Flesher 1441

Characterization of the Catalytic Domain of Bovine Adrenal Tyrosine Hydroxylase
Cory Abate, John A. Smith, and Tong H. Joh 1446

β-Adrenergic Receptors and Stimulatory Effects of (−) Isoproterenol on Testosterone Production in Fetal Mouse Leydig Cells *M. Breuiller, A. Tahri-Joutei, F. Ferré and G. Pointis* 1454

ERRATUM
Volume 150, Number 3, February 15, 1988: M. Zagari, J. R. Hepler, C. Harris, and B. Herman, "Inhibition of Early Platelet-Derived Growth Factor Responses in BALB/c-3T3 Cells by Interferon," pp. 1207–1212 1461
Author Index for Volume 151 1462

Volume 152, Number 1, April 15, 1988

AUTHOR INDEX, Volume 152, Number 1, April 15, 1988 iii
The Internal Crosslinking of the S1 Heavy Chain from Smooth Muscle Probed by Dibromobimane *Armelle Bonet, Etienne Audemard, and Dominique Mornet* 1
A Supersensitive Dot-Hybridization Method: Rapid and Quantitative Detection of Host-Derived DNA in Recombinant Products at the 1-pg Level *Shun'ichi Kuroda, Yasuaki Itoh, Takeshi Miyazaki, and Yukio Fujisawa* 9
Inhibition of Aromatic L-Amino Acid Decarboxylase in Clonal Pheochromocytoma PC12h Cells by *N*-Methyl-4-phenylpyridinium Ion (MPP^+) *Makoto Naoi, Tsutomu Takahashi, Hiroshi Ichinose, and Toshiharu Nagatsu* 15
Preference of Human Mitochondrial RNA Polymerase for Superhelical Templates with Mitochondrial Promoters *Jenny M. Buzan and Robert L. Low* 22
Nucleic Acid Levels in *Anaplasma marginale* during Experimentally Induced Bovine Anaplasmosis *M. A. Martinez, N. Marquez Q., and M. Ysern-Caldentey* 30
Lack of Atrial Natriuretic Peptide Receptors in Human Aldosteronoma *H. Shionoiri, N. Hirawa, I. Takasaki, Y. Ishikawa, H. Oda, E. Gotoh, M. Hosaka, M. Shimonaka, M. Ishido, and S. Hirose* 37
Increase of Estrogen Receptor Level by Thyroxine in Estrogen-Dependent Pituitary Tumor (MTT/F84) in Rats *Nariaki Fujimoto, Bidyut Roy, Hiromitsu Watanabe, and Akihiro Ito* 44
Identification of 5,6,7,8-Tetrahydropterin and 5,6,7,8-Tetrahydrobiopterin in *Drosophila melanogaster* *Juan J. Guillamón and Juan Ferré* 49
Efficient and Easy Synthesis of Octathymidylate Covalently Linked to Intercalating 9-Aminoellipticine *J.-J. Vasseur, C. Gauthier, B. Rayner, J. Paoletti, and J.-L. Imbach* 56
The 27,000-Da Stress Proteins Are Phosphorylated by Protein Kinase C during the Tumor Promoter-Mediated Growth Inhibition of Human Mammary Carcinoma Cells *Romano Regazzi, Urs Eppenberger, and Doriano Fabbro* 62
The Structure of Proteins in Aqueous Solutions: An Assessment of Triose Phosphate Isomerase Structure by Fourier-Transform Infrared Spectroscopy *José Castresana, Arturo Muga, and José Luis R. Arrondo* 69
α-Factor-Directed Synthesis of *Bacillus stearothermophilus* α-Amylase in *Saccharomyces cerevisiae* *Roberto V. Nonato and Kazuo Shishido* 76
Impaired Proteolytic Processing of Lysosomal *N*-Acetyl-β-hexosaminidase in Cultured Fibroblasts from Patients with Infantile Generalized *N*-Acetylneuraminic Acid Storage Disease *Larry W. Hancock, J. Peter Ricketts, and John Hildreth IV* 83
IGF Receptors in Myocardial Capillary Endothelium: Potential Regulation of IGF-I Transport to Cardiac Muscle *Robert S. Bar, Mary Boes, and Alexander Sandra* 93
Increased Sulfate Uptake in Skin Fibroblasts Isolated from Cystic Fibrosis Patients *Ada Elgavish and Elias Meezan* 99
High Expression of an *N*-Acetylglucosaminyltransferase III in 3'-Methyl-DAB-Induced Hepatoma and Ascites Hepatoma *Atsushi Nishikawa, Shigeru Fujii, Toshihiro Sugiyama, Norio Hayashi, and Naoyuki Taniguchi* 107

Fatty Acid-Dependent Hydrogen Peroxide Production in *Lactobacillus* *Martha S. Nuñez de Kairuz, Marìa E. Olazabal, Guillermo Oliver, Aída A. Pesce de Ruiz Holgado, Eddy Massa, and Ricardo N. Farías* 113

Mapping of Calmodulin-Binding Domain of Ca^{2+}/Calmodulin-Dependent Protein Kinase II from Rat Brain *Rochelle M. Hanley, Anthony R. Means, Bruce E. Kemp, and Shirish Shenolikar* 122

Glomeruli from Ischemic Rat Kidneys Produce Increased Amounts of Platelet-Activating Factor *Antonio López-Farré, Miguel Torralbo, and José M. López-Novoa* 129

Neutrophil Activation by Surface-Bound IgG: Pertussis Toxin Insensitive Activation *Warren D. Blackburn, Jr., and Louis W. Heck* 136

The Upstream Promoter of the Human LDL Receptor Gene Does Not Contain a Cyclic AMP Response Element *Koichiro Takagi, Eric K. Hoffman, and Jerome F. Strauss III* 143

Activation of Protein Kinase C from B Lymphocytes by Lipid A *Lisardo Boscá and María J. M. Díaz-Guerra* 149

Normalization of Liver Glucosylceramide Levels in the "Gaucher" Mouse by Phosphatidylserine Injection *Subhash C. Datta and Norman S. Radin* 155

Involvement of Ca^{2+} Influx in F -Stimulated Pepsinogen Release from Guinea Pig Gastric Chief Cells *Takashi Matozaki, Choitsu Sakamoto, Munehiko Nagao, Hogara Nishizaki, Yoshitaka Konda, and Shigeaki Baba* 161

Heat Shock-Related Decline in Activity and Amounts of Active Elongation Factor-1α in Aging and Immortal Human Cells *Suresh I. S. Rattan, Jens Cavallius, and Brian F. C. Clark* 169

Limited Proteolysis of Bovine Adrenodoxin Reductase: Evidence for a Domain Structure *Robert J. Warburton and David W. Seybert* 177

Human Ia-Associated Invariant Chain Gene Has Multiple Transcription Initiation Sites in CLL Cells *Jiro Kudo, Kazufumi Dohmen, Yoshihiro Tsuchiya, Ryuji Shimamura, Masafumi Shirahama, Hiromi Ishibashi, Yoshiyuki Niho, and Grady F. Saunders* 184

Effect of Clomiphene on Fatty Acids, Sterols, and Membrane Fluidity in Clavine-Producing *Claviceps purpurea* Strains *Sylvie Pažoutová, Vladimír Křen, Tomáš Řezanka, and Přemysl Sajdl* 190

Bile Acids of Patients with Renal Failure: Possibility of Bile Acid Secretion in the Distal Tubule *Nobuo Yamaga, Koichi Adachi, Hiromi Kohara, and Kyutaro Shimizu* 197

Biologically Active Calcitonin Analogs Which Have Minimal Interactions with Phospholipids *Richard M. Epand, Raquel F. Epand, and Ronald C. Orlowski* 203

Monoclonal Antibodies to the 27–34K Insulin-like Growth Factor Binding Protein *E.-M. Rutanen, T. Kärkkäinen, C. Lundqvist, F. Pekonen, O. Ritvos, P. Tanner, M. Welin, and T. Weber* 208

Transforming Growth Factor α (TGFα) Induction of c-*fos* and c-*myc* Expression in C3H 10T1/2 Cells *Anthony F. Cutry, Alan J. Kinniburgh, Daniel R. Twardzik, and Charles E. Wenner* 216

Differential Uptake of Isomeric 2-Bromohydroquinone–Glutathione Conjugates into Kidney Slices *Serrine S. Lau, Mary G. McMenamin, and Terrence J. Monks* 223

Inhibitory Effect of Neurotensin on Pentagastrin-Stimulated Gastric Acid Secretion in Pylorus-Ligated Rats *Robert A. Hammer, Betty Wagner, and Hilda S. Soyode* 231

Induction of Indoleamine Dioxygenase by Interferon in Mice: A Study with Different Recombinant Interferons and Various Cytokines *Marina Bianchi, Riccardo Bertini, and Pietro Ghezzi* 237

GTP Analogues Cause Release of the α Subunit of the GTP Binding Protein, G_O, from the Plasma Membrane of NG108-15 Cells *Hayley McArdle, Ian Mullaney, Anthony Magee, Cecilia Unson, and Graeme Milligan* 243

Rapid and Transient Induction of c-*fos*, c-*myc*, and c-Ha-*ras* in Rat Liver following Glycine Administration *S. Vasudevan, G. Lee, P. M. Rao, S. Rajalakshmi, and D. S. R. Sarma* 252

Evidence That the Intervening Sequence Was Excised as a Linear Molecule during D_β–J_β Rearrangement in T-Cell Receptor β Chain Gene Loci
Teruo Ino, Masami Hirano, and Yoshikazu Kurosawa 257

Bovine Liver cDNA Clones Encoding a Precursor of the α-Subunit of the Mitochondrial ATP Synthase Complex *Gail A. M. Breen* 264

Thyroid Hormones Inhibit the Ca^{2+} Calmodulin-Induced Activation of Myosin Light Chain Kinase *Masatoshi Hagiwara, Shigeo Mamiya, Masahiro Ochiai, and Hiroyoshi Hidaka* 270

Identification of Different Charged Species of a Human Monocyte-Derived Neutrophil-Activating Peptide (MONAP) *J.-M. Schröder, U. Mrowietz, and E. Christophers* 277

Different Sensitivity to Phorbol Esters and Pertussis Toxin of Bombesin- and Platelet-Derived Growth Factor-Induced, Phospholipase C-Mediated Hydrolysis of Phosphoinositides in NIH/3T3 Cells *Masahiko Hoshijima, Takashi Ueda, Yasuo Hamamori, Toshihiko Ohmori, and Yoshimi Takai* 285

Degradation of ^{125}I-Atrial Natriuretic Peptide by a Soluble Metallopeptidase Isolated from Rat Ventricular Myocytes *Elizabeth L. Rugg, James F. Aiton, and Gordon Cramb* 294

Effect of Superoxide and Lipid Peroxide on Cytosolic Free Calcium Concentration in Cultured Pig Aortic Endothelial Cells *Jiro Hirosumi, Yasuyoshi Ouchi, Masae Watanabe, Jun Kusunoki, Tetsuro Nakamura, and Hajime Orimo* 301

Reconstitution of Purified Cardiac Muscle Calcium Release Channel (Ryanodine Receptor) in Planar Bilayers *Lin Hymel, Hansgeorg Schindler, Makoto Inui, and Sidney Fleischer* 308

Protein Kinase C Activity in Compensatory Kidney Growth
Carlos Caramelo, Phoebe Tsai, Koji Okada, and Robert W. Schrier 315

Presence of Digitalis-like Factor in Mammalian Plasma
A. Goto, K. Yamada, M. Ishii, M. Yoshioka, T. Ishiguro, C. Eguchi, and T. Sugimoto 322

Human Absorption of Fish Oil Fatty Acids as Triacylglycerols, Free Acids, or Ethyl Esters
Larry D. Lawson and Bronwyn G. Hughes 328

Constitutive Activity of Membrane-Inserted Protein Kinase C
Mohammad D. Bazzi and Gary L. Nelsestuen 336

Use of Membrane Spin Label Spectra to Monitor Rates of Reaction of Partitioning Compounds: Hydrolysis of a Local Anesthetic Analog
M. Lucia Bianconi, Antonia T. do Amaral, and Shirley Schreier 344

Conformation and Sandwiching of Bases by Azido Groups in the Crystal Structure of 3′-Azido-3′-deoxy-thymidine (AZT), an Antiviral Agent That Inhibits HIV Reverse Transcriptase *R. Parthasarathy and Heasook Kim* 351

Parallel Effects of Insulin-like Growth Factor-II and Insulin on Glucose Metabolism of Developing Mouse Embryonic Limb Buds in Culture
B. Bhaumick and R. M. Bala 359

Cation Binding Sites on Actin: A Structural Relationship between Antigenic Epitopes and Cation Exchange *C. Méjean, H. K. Hué, F. Pons, C. Roustan, and Y. Benyamin* 368

17β-Hydroxysteroid Dehydrogenase Activity in Canine Pancreas
G. Mendoza-Hernández, I. López-Solache, J. L. Rendón, V. Díaz-Sánchez, and J. C. Díaz-Zagoya 376

Receptors for Calcitonin Gene-Related Peptide on Rat Liver Plasma Membranes
Akinori Yamaguchi, Tsutomu Chiba, Yasuhiko Okimura, Toshiyuki Yamatani, Tomoyuki Morishita, Akira Nakamura, Tetsuya Inui, Toshiharu Noda, and Takuo Fujita 383

Interleukin 1 Induced Inositol Phospholipid Breakdown in Murine Macrophages: Possible Mechanism of Receptor Activation *E. S. Wijelath, A. M. Kardasz, R. Drummond, and J. Watson* 392

Demonstration of Insulin-like Growth Factor (IGF-I and -II) Receptors and Binding Protein in Human Breast Cancer Cell Lines *D. D. De Leon, B. Bakker, D. M. Wilson, R. L. Hintz, and R. G. Rosenfeld* 398

Kinetic Distinction between Rapid-Equilibrium Random and Abortive Ordered Enzymatic Mechanisms Using Alternative Substrates or Kinetic Isotope Effects *Cynthia A. Gates and Dexter B. Northrop* 406

Bioactivation of the Narcotic Drug Codeine in Human Liver Is Mediated by the Polymorphic Monooxygenase Catalyzing Debrisoquine 4-Hydroxylation (Cytochrome *P*-450 db1/bufI) *Pierre Dayer, Jules Desmeules, Thierry Leemann, and Rita Striberni* 411

Use of Ryanodine for Functional Removal of the Calcium Store in Smooth Muscle Cells of the Guinea Pig *M. Iino, T. Kobayashi, and M. Endo* 417

Chronic Ethanol Consumption Inhibits Repair of Dimethylnitrosamine-Induced DNA Alkylation *Siraj I. Mufti, Mario Salvagnini, Charles S. Lieber, and Anthony J. Garro* 423

Heparin Protects Heparin-Binding Growth Factor-I from Proteolytic Inactivation *in Vitro* *Todd K. Rosengart, Warren V. Johnson, Robert Friesel, Richard Clark, and Thomas Maciag* 432

Serine Phosphorylation of the v-*rel* Oncogene Product/pp40 Complex *H. Y. Lim Tung, William J. Bargmann, and Henry R. Bose, Jr.* 441

Inhibition of c-H-*ras* Oncogene Induced Transformation of Rat Embryo Fibroblasts by Cotransfected Polynucleotides Containing Alternating Purine–Pyrimidine Sequences *R. Banerjee, W. L. W. Hsiao, I. B. Weinstein, and D. Grunberger* 449

Effects of Chronic Treatment with a Novel Angiotensin Converting Enzyme Inhibitor, CS622, and a Vasodilator, Hydralazine, on Atrial Natriuretic Factor (ANF) in Spontaneously Hypertensive Rats (SHR) *Tomiichiro Oda, Yasuteru Iijima, Toshio Sada, Hiroshi Nishino, Kiyoshi Oizumi, and Hiroyuki Koike* 456

Partial Purification of a Protein Growth Inhibitor from Multicellular Spheroids *James P. Freyer, Patricia L. Schor, and Arthur G. Saponara* 463

Intracellular Transport of VSV G Protein Occurs in Cells Lacking a Nuclear Envelope *John A. Hanover* 469

Controlled Degradation of Yeast $tRNA^{Phe}$ by Spleen Phosphodiesterase in the Presence of Ethidium Bromide *Zbigniew J. Lesnikowski* 477

Molecular Size of the Na^+–H^+ Antiport in Renal Brush Border Membranes, as Estimated by Radiation Inactivation *R. Béliveau, M. Demeule, and M. Potier* 484

Volume 152, Number 2, April 29, 1988

AUTHOR INDEX, Volume 152, Number 2, April 29, 1988 iii

Lateral Mobility of Plasma Membrane Lipids in Normal and Transformed Keratinocytes *Leon G. J. Tertoolen, Johanna Kempenaar, Johannes Boonstra, Siegfried W. de Laat, and Maria Ponec* 491

Study on the Role of Endogenous Polyamines in Glucagon, Isoproterenol or Serum-Mediated Induction of Tyrosine Aminotransferase in Cultured Heart Cells *Carlo Clô, Benedetta Tantini, Sandra Marmiroli, Carla Pignatti, and Claudio M. Caldarera* 497

Transamidating Activities of Factor $XIII_a$ and of Transglutaminases, Measured by an ELISA Procedure *P. T. Velasco, F. Karush, and L. Lorand* 505

Conformational Analysis of Morphiceptin by NMR Spectroscopy *M. A. Castiglione-Morelli, B. Hartrodt, K. Neubert, P. A. Temussi, and E. Trivellone* 512

A New Kinin Moiety in Human Plasma Kininogens *T. Mindroiu, O. A. Carretero, D. Proud, D. Walz, and A. G. Scicli* 519

Role of Platelet-Activating Factor (PAF) in the Bronchopulmonary Alterations and β-Adrenoceptor Function Induced by Endotoxin
Caroline Touvay, Béatrice Vilain, Christian Carré, Jean Michel Mencia-Huerta, and Pierre Braquet 527

Presence of Benzodiazepine-like Molecules in Mammalian Brain and Milk
Jorge H. Medina, Clara Peña, Marta Piva, Alejandro C. Paladini, and Eduardo De Robertis 534

Metabolism of Benzo[a]pyrene by a Dioxygenase Enzyme System of the Freshwater Green Alga *Selenastrum capricornutum*
David Warshawsky, Martha Radike, Koka Jayasimhulu, and Terence Cody 540

1,25-Dihydroxyvitamin D_3 Enhancement of Concanavalin-A Induced Bovine Lymphocyte Proliferation: Requirement of Monocytes
F. G. Hustmyer, B. J. Nonnecke, D. C. Beitz, R. L. Horst, and T. A. Reinhardt 545

Reduced Cyclosporin Accumulation in Multidrug-Resistant Cells
Howard Goldberg, Victor Ling, Pui Y. Wong, and Karl Skorecki 552

Inhibition of Quinolinate Phosphoribosyltransferase by Pyridine Analogs of Quinolinic Acid *Linda Kalikin and K. C. Calvo* 559

Vasopressin Is the Only Component of Serum-Free Medium That Stimulates Phosphatidylcholine Hydrolysis and Accumulation of Diacylglycerol in Cultured REF52 Cells *Clement J. Welsh, Hui-ting Cao, Holly Chabbott, and Myles C. Cabot* 565

Immunochemical Similarity of the Human Plasma Growth Hormone-Binding Protein and the Rabbit Liver Growth Hormone Receptor
Gerhard Baumann and Melissa A. Shaw 573

Subtle Alteration of the Active Site of Ribulose Bisphosphate Carboxylase/Oxygenase by Concerted Site-Directed Mutagenesis and Chemical Modification
Harry B. Smith, Frank W. Larimer, and Fred C. Hartman 579

Studies with Protein Kinase C Inhibitors Presently Available Cannot Elucidate the Role of Protein Kinase C in the Activation of NADPH Oxidase
Roland Seifert and Christoph Schächtele 585

Rapid Isolation of Lysyl-tRNA Synthetase from Rat Liver
A. Madan Kumar and R. Nayak 593

200-kDa Neurofilament Protein Binds Al, Cu, and Zn
Keith B. Pierson and Merle A. Evenson 598

Mode of Action of Pentavalent Antimonials: Specific Inhibition of Type I DNA Topoisomerase of *Leishmania donovani*
Asit K. Chakraborty and Hemanta K. Majumder 605

Removal of the 33-, 23-, and 18-kDa Extrinsic Proteins of Photosystem II by Sulfite Treatment at Alkaline pH *M. Beauregard, L. Morin, and R. Popovic* 612

Glycine Transport by Cultured Human Fibroblasts
Nicola Longo, Renata Franchi-Gazzola, Ovidio Bussolati, Valeria Dall'Asta, Franca A. Nucci, Alberto Spisni, and Gian C. Gazzola 617

Reassessment of Copper Stoichiometry in Ascorbate Oxidase
Laura Morpurgo, Isabella Savini, Giuseppina Gatti, Martino Bolognesi, and Luciana Avigliano 623

Iron–Molybdenum Cofactor of Nitrogenase: Electrochemical Determination of the Electron Stoichiometry of the Oxidized/Semireduced Couple
Franklin A. Schultz, Stephen F. Gheller, and William E. Newton 629

The 28- and 70-k Polypeptide Components of Mouse Ra-Reactive Factor Are Responsible for Bactericidal Activity *Izumi Ihara, Setsunosuki Ihara, Akiko Nagashima, Yue-Hua Ji, and Masaya Kawakami* 636

Monoclonal Antibody Recognition of Two Subtype Forms of Protein Kinase C in Human Platelets *Masato Watanabe, Masatoshi Hagiwara, Koji Onoda, and Hiroyoshi Hidaka* 642

Inhibition of Adenylate Cyclase Activity during the Reversible Shape Change in Human Platelets *D. P. Dimitrov and F. R. Bühler* 649

Acidic pH- and Metal Ion (Zn^{2+} or Mn^{2+})-Dependent Proteolysis of 140-kDa Atrial Natriuretic Factor Receptor in Bovine Adrenal Cortex Plasma Membranes: Evidence for Membrane-Bound Acidic Metalloendopeptidase *Kunio S. Misono* 658

Heterogenous Photochemical and Chloroplast-Mediated Activation of Spinach Fructose-1,6-bisphosphatase *Vijay Maheshwari, R. Bhardwaj, D. Sharma, and S. Nagar* 668

Globotriosyl Ceramide Is Specifically Recognized by the *Escherichia coli* Verocytotoxin 2 *T. Waddell, S. Head, M. Petric, A. Cohen, and C. Lingwood* 674

Induction of Renal Cytochrome *P*-450 in Hepatic Microsomes of Diabetic Rats *Susumu Imaoka, Nobuo Shimojo, and Yoshihiko Funae* 680

Pseudomonas aeruginosa Cytotoxin Stimulates Secretion of Amylase and Protease Zymogens with a Concomitant Decrease of mRNA Levels in Isolated Rat Pancreatic Acini *Paul P. Lau, Robbin L. Palmer, Hye Chong L. Lambert, Catherine S. Song, Frieder Lutz, and Michael C. Geokas* 688

DNA-Binding and DNA-Cleaving Properties of a Synthetic Model AGAGLU Related to the Antitumor Drugs AMSA and Bleomycin *Christian Bailly, Abderraouf Kenani, Nicole Helbecque, Jean-Luc Bernier, Raymond Houssin, and Jean-Pierre Hénichart* 695

The Production of Active Human Thyroid-Stimulating Hormone from α and β mRNAs in *Xenopus laevis* Oocytes *Yoshihide Hayashizaki, Yuichi Endo, Kiyoshi Miyai, and Kenichi Matsubara* 703

Evidence for Glycation of Horse Liver Alcohol Dehydrogenase *in Vivo* *John D. McPherson, Brian H. Shilton, and Donald J. Walton* 711

Porcine Follistatin Gene Structure Supports Two Forms of Mature Follistatin Produced by Alternative Splicing *Shunichi Shimasaki, Makoto Koga, Fred Esch, Maluz Mercado, Karen Cooksey, Ann Koba, and Nicholas Ling* 717

Bradykinin Induces the Biphasic Production of Lysophosphatidylinositol and Diacylglycerol in a Dorsal Root Ganglion X Neurotumor Hybrid Cell Line, F-11 *Paul Francel and Glyn Dawson* 724

Stoichiometric Carboxyl Methylation of Chromogranins from Bovine Adrenal Medullary Cells *Kannappan Veeraragavan, Raymond Coulombe, and Claude Gagnon* 732

Magnetic Urokinase: Targeting of Urokinase to Fibrin Clot *Takayuki Yoshimoto, Kimiko Ohwada, Katsunobu Takahashi, Ayako Matsushima, Yuji Saito, and Yuji Inada* 739

Liver Albumin Synthesis Increases in Free Ribsomes during the Acute-Phase Reaction *Roberta Piccoletti, Maria Giovanna Aletti, Emilia Rappocciolo, Paola Bendinelli, and Aldo Bernelli-Zazzera* 744

Distinct Nuclear 7 S RNAs Hybridize to Regulatory Regions of Two Oncogenes *J. Kurz, J. Lovely, S. Cubitt, and M. O. Krause* 753

Human Pregnancy-Specific β_1-Glycoprotein: A New Member of the Carcinoembryonic Antigen Gene Family *Shuichiro Watanabe and Janice Yang Chou* 762

Control of Expression of the 1,4-Dihydropyridine Receptor in BC_3H1 Cells *David Rampe, John M. Caffrey, Michael D. Schneider, and Arthur M. Brown* 769

Isolation and Structural Analysis of Embryonic Chicken Pepsinogen Gene: Avian Homolog of Prochymosin Gene *Kensuke Hayashi, Sadao Yasugi, and Takeo Mizuno* 776

Copper and Endogenous Mediators of Estradiol Action *Jerry H. Fishman and Jack Fishman* 783

Chemical Modification of Lysine Residues at the Active Site of Human Placental Estradiol 17β-Dehydrogenase *Hiroshi Inano* 789

G_{M1}-Gangliosidosis: Abnormalities in Biosynthesis and Early Processing of β-Galactosidase in Fibroblasts
Eiji Nanba, Akihiko Tsuji, Kiyoshi Omura, and Yoshiyuki Suzuki 794

Antiviral Activity of the Pregnancy Recognition Hormone Ovine Trophoblast Protein-1
Carol H. Pontzer, Barbara A. Torres, Jeffrey L. Vallet, Fuller W. Bazer, and Howard M. Johnson 801

Anion-Dependent Modulations of DNA Topoisomerase II-Mediated Reactions in Potassium-Containing Solutions
Leonard A. Zwelling, Diana Chan, Michael Hinds, Lynn Silberman, and Janice Mayes 808

Tissue Distribution of an Endogenous Ligand to the Na,K ATPase Molecule
Albert L. Rauch and Vardaman M. Buckalew, Jr. 818

Fatty Acid Activation of Protein Kinase C: Dependence on Diacylglycerol
Veronik Verkest, Mark McArthur, and Susan Hamilton 825

Role of Calcium in Stabilizing the Structure of Hyalin, a Major Protein Component of the Sea Urchin Extraembryonic Hyaline Layer
John J. Robinson, Lorne Taylor, and Vettai S. Ananthanarayanan 830

cDNA Cloning and Amino Acid Sequence of Human Brain 2′,3′-Cyclic-Nucleotide 3′-Phosphodiesterase *Tadashi Kurihara, Yasuo Takahashi, Akiko Nishiyama, and Toshiro Kumanishi* 837

A Male-Specific Renal Cytochrome *P*-450 Isozyme(s) Responsible for Mutagenic Activation of 3-Methoxy-4-aminoazobenzene in Mice
Masakuni Degawa, Masayuki Namiki, Shin-ichi Miura, Hironao Ueno, and Yoshiyuki Hashimoto 843

Immunoaffinity Purification of Human Prorenin Produced in Chinese Hamster Ovary Cells *Yasuyuki Ishizuka, Michiya Saito, Hitoshi Hori, Roger A. Poorman, Shigeki Yoshida, and Kazuo Murakami* 849

Near Normal Levels of Isoprenoid Lipids in Severe Mevalonic Aciduria
R. Kennedy Keller and W. Scott Simonet 857

Sequence of a Human Kidney cDNA Clone Encoding Thymosin β_{10}
Virginia McCreary, Sreedharan Kartha, Graeme I. Bell, and F. Gary Toback 862

Binding of Dicyclohexylcarbodiimide to a Native F_1-ATPase–Inhibitor Protein Complex Isolated from Bovine Heart Mitochondria
Carmen Beltrán, A. Gómez-Puyou, and M. Tuena de Gómez-Puyou 867

Endotoxin-Induced Zinc Accumulation by Liver Cells Is Mediated by Metallothionein Synthesis *Tomihiro Fukushima, Yoshio Iijima, and Futami Kosaka* 874

Interleukin 2 Self-Association *J. D. Fleischmann, D. Wentworth, F. Valencic, A. L. Imbembo, and K. A. Koehler* 879

Adenosine Inhibits Phenylephrine Activation of Phospholipase A_2 in Hamster Brown Adipocytes *Richard J. Schimmel and Mary Ellen Elliott* 886

A Novel Biological Effect of Atrial Natriuretic Hormone: Inhibition of Mesangial Cell Mitogenesis *Adam Johnson, Ferzan Lermioglu, Uttam C. Garg, Rebecca Morgan-Boyd, and Aviv Hassid* 893

Aging and Crosslinking of Skin Collagen
Mitsuo Yamauchi, David T. Woodley, and Gerald L. Mechanic 898

Characterization of High-Affinity Receptor Sites for Atrial Natriuretic Factor in Anterior Pituitary Gland: Evidence for the Existence of Two Receptor Forms
B. Koch, T. Boudjada, and B. Lutz-Bucher 904

A Sequence-Dependent Monoclonal Antibody Specific for Single-Chain Urokinase
John R. Charpie, Edgar Haber, and Gary R. Matsueda 910

Reaction of *S*-Nitrosoglutathione with Sulfhydryl Groups in Protein
Jeen-Woo Park 916

Decreased Expression of Cytochrome *P*-452 in the Resistance Phenotype Characteristic of Putative Preneoplastic Hepatocyte Nodules during Hepatocarcinogenesis
M. W. Roomi, M. A. Bacher, G. G. Gibson, D. V. Parke, and E. Farber 921

Effect of Botulinum D Toxin on Neutrophils
J. L. Mege, M. Volpi, E. L. Becker, and R. I. Sha'afi 926

Dopamine D_1 Receptors with Enhanced Agonist Affinity and Reduced Antagonist Affinity Revealed by Chemical Modification
Natalie H. Bzowej, Hyman B. Niznik, and Philip Seeman 933

Characterization of a Functional Recombinant Rat Liver Aldehyde Dehydrogenase: Expression as a Nonfusion Protein in *Escherichia coli*
Kimberly Harper, David E. Jones, Jr., Mark D. Brennan, and Ronald Lindahl 940

ERRATA

Volume 149, Number 3, December 31, 1987: V. C. Gandhi and D. H. Ross, "A Novel Kappa Agonist Inhibits [^{3}H]Nimodipine Binding to a Ca^{++} Channel Receptor Protein in Rat Brain," pp. 1042–1048 948

Volume 150, Number 3, February 15, 1988: Mitree M. Ponpipom, San-Bao Hwang, Thomas W. Doebber, John J. Acton, Alfred W. Alberts, Tesfaye Biftu, David R. Brooker, Robert L. Bugianesi, John C. Chabala, Nancy L. Gamble, Donald W. Graham, My-Hanh Lam, and Margaret S. Wu, "(±)-*Trans*-2-(3-Methoxy-5-methylsulfonyl-4-propoxyphenyl)-5-(3,4,5-trimethoxyphenyl) tetrahydrofuran (L-659,989), a Novel, Potent PAF Receptor Antagonist," pp. 1213–1220 949

Volume 152, Number 3, May 16, 1988

AUTHOR INDEX, Volume 152, Number 3, May 16, 1988 iii

Depletion of Protein Kinase C Induced by an Anti-HLA Class I Monoclonal Antibody in Phytohemagglutinin-Activated Human T Cells
Licia Poltronieri, Edon Melloni, Michele Rubini, Rita Selvatici, Cristina Mazzilli, Roberto Baricordi, and Enrico Gandini 951

Separation of the 24-kDa Substrate for Botulinum C3 ADP-Ribosyltransferase and the Cholera Toxin ADP-Ribosylation Factor
Su-Chen Tsai, Ronald Adamik, Joel Moss, and Klaus Aktories 957

Role of Disulfide Bonds in Folding and Secretion of Human Lysozyme in *Saccharomyces cerevisiae* *Yoshio Taniyama, Yoshio Yamamoto, Masafumi Nakao, Masakazu Kikuchi, and Morio Ikehara* 962

Inhibition and Photoinactivation of the Bovine Heart Mitochondrial F_1-ATPase by the Cytotoxic Agent, Dequalinium *Shaoqui Zhuo and William S. Allison* 968

Assay of a Ribonuclease That Preferentially Hydrolyses mRNAs Containing Cytokine-Derived UA-Rich Instability Sequences *Bruce Beutler, Patricia Thompson, Jennifer Keyes, Kathleen Hagerty, and David Crawford* 973

Restoration of High-Potential Cytochrome *b*-564 by Integration of Baker's Yeast Complex III into Liposomes
M. Hervás, J. M. Ortega, F. F. de la Rosa, and M. Losada 981

Diacylglycerol Activation of Protein Kinase C Is Modulated by Long-Chain-Acyl-CoA
Miguel Bronfman, M. Nelly Morales, and Ariel Orellana 987

Activation of Bovine Neutrophil Oxidase in a Cell Free System: GTP-Dependent Formation of a Complex between a Cytosolic Factor and a Membrane Protein
Jacques Doussiere, Marie-Claire Pilloud, and Pierre V. Vignais 993

Nifedipine and BAY K Inhibit Contraction Independently from Their Action on Calcium Channels *Vincent Jacquemond and Oger Rougier* 1002

Molecular Forms of Nerve Growth Factor in Mouse Submaxillary Glands
J. Lakshmanan, C. Burns, and R. A. Smith 1008

Insulin Binding and Insulin Receptor Tyrosine Kinase Activity Are Not Altered in the Liver of Rats with Non-insulin-dependent Diabetes
Micheline Kergoat, Jean Simon, and Bernard Portha 1015

Studies with FtsA–*LacZ* Protein Fusions Reveal FtsA-Located Inner–Outer Membrane Junctions *Younghae Chon and Randall Gayda* 1023
Photoaffinity Labeling of ANF Receptor in Cultured Brain Neurones *Brigitte Ricard, Patrick Fourquet, Annick Massacrier, and François Couraud* 1031
Trophic Effect of Glucagon-(1-21) Peptide on the Isolated Rat Ileal Mucosal Cells *Nobuaki Watanabe, Tatsuo Matsuyama, Mitsuyoshi Namba, Jun-ichiro Miyagawa, Hidehiko Itoh, Ryoya Komatsu, Norio Kono, and Seiichiro Tarui* 1038
Expression of Human c-*raf*-1 Oncogene Proteins in *Escherichia coli* *Walter Kolch, Tom I. Bonner, and Ulf R. Rapp* 1045
Site-Directed Mutagenesis of β-Galactosidase (*Escherichia coli*) Reveals That Tyr-503 Is Essential for Activity *Mark Ring, D. E. Bader, and R. E. Huber* 1050
Activation of Heparin Cofactor II by Heparin Oligosaccharides *Margaret M. Maimone and Douglas M. Tollefsen* 1056
Protein Kinase C Differentially Inhibits Muscarinic Receptor Operated Ca^{2+} Release and Entry in Human Salivary Cells *Xinjun He, Xiaozai Wu, and Bruce J. Baum* 1062
Pharmacological Profile of 8-Amino Octanoic Acid Substituted Atrial Natriuretic Factor Analogs *C. Fred Hassman, John T. Pelton, Stephen H. Buck, Phillip Shea, Eileen F. Heminger, Robert J. Broersma, and Judd M. Berman* 1070
Formation of Homogeneous Crosslinked Lattices between Oligomannose-Type Glycopeptides and Concanavalin A *M. Islam Khan, Lokesh Bhattacharyya, and C. Fred Brewer* 1076
Kinetics of the Assembly of Peroxisomes after Fusion of Complementary Cell Lines from Patients with the Cerebro-hepato-renal (Zellweger) Syndrome and Related Disorders *S. Brul, E. A. C. Wiemer, A. Westerveld, A. Strijland, R. J. A. Wanders, A. W. Schram, H. S. A. Heymans, R. B. H. Schutgens, H. Van Den Bosch, and J. M. Tager* 1083
On the Glutamate Transport through Cell Envelope Vesicles of *Halobacterium halobium* *Naoki Kamo, Yohko Wakamatsu, Keiko Kohno, and Yonosuke Kobatake* 1090
Heterologous Down-Regulation of Vascular Atrial Natriuretic Peptide Receptors by Phorbol Esters *Yukio Hirata* 1097
Interleukin 1 Induces c-*fos* Protooncogene Expression in Cultured Human Endothelial Cells *F. Colotta, M. G. Lampugnani, N. Polentarutti, E. Dejana, and A. Mantovani* 1104
Guanine Nucleotide- and Inositol Trisphosphate-Induced Inhibition of the Ca^{2+} Pump in Rat Heart Sarcolemmal Vesicles *Tuan H. Kuo.* With the technical assistance of *Wayne Tsang* 1111
Cloning and Characterization of Elastase Structural Gene from *Pseudomonas aeruginosa* IFO 3455 *Shunji Yamamoto, Jun Fukushima, Yusaku Atsumi, Hiroaki Takeuchi, Susumu Kawamoto, Kenji Okuda, and Kazuyuki Morihara* 1117
Characterization of Partially Purified Cytosolic Protein Tyrosine Kinase from Porcine Spleen *Keiko Sakai, Shun-ichi Nakamura, Kiyonao Sada, Tomoko Kobayashi, Hatsuji Uno, and Hirohei Yamamura* 1123
High-Molecular-Weight Forms of Insulin-like Growth Factor II and Its Binding Protein Identified by Protein Immunoblotting *P. D. K. Lee, D. R. Powell, C. H. Li, H. Bohn, F. Liu, and R. L. Hintz* 1131
Binding Site of the Rat Liver Specific Monoclonal Antibody *Keiki Sato, Takuya Ikeda, and Yasuaki Osada* 1138
Phosphorylation of Secreted Forms of Human Interferon-β2/Hepatocyte Stimulating Factor/Interleukin 6 *Lester T. May, Uma Santhanam, Stephen B. Tatter, Nina Bhardwaj, John Ghrayeb, and Pravinkumar B. Sehgal* 1144

Cooperative Effects of Tumor Necrosis Factor-α and 1,25-Dihydroxyvitamin D_3 on Growth Inhibition, Differentiation, and c-*myc* Reduction in Human Promyelocytic Leukemia Cell Line HL-60 *Yuko Katakami, Yoshinobu Nakao, Nobuyuki Katakami, Tamio Koizumi, Ryoichi Ogawa, Hiroki Yamada, Yoshimi Takai, and Takuo Fujita* 1151

Partial Purification of Alanine Carrier from Rabbit Small Intestine Brush Border Membrane and Its Functional Reconstitution into Proteoliposomes *Makoto Nakanishi, Hajime Hirata, Akihiko Moriyama, Yasuo Kagawa, and Makoto Sasaki* 1158

Comparison of Binding Affinities and Calcium Current Inhibitory Effects of a 1,4-Dihydropyridine Derivative (PN 200–110) in Vascular Smooth Muscle *C. Dacquet, P. Pacaud, G. Loirand, C. Mironneau, and J. Mironneau* 1165

Adenosine Triphosphate Can Maintain Multipotent Haemopoietic Stem Cells in the Absence of Interleukin 3 via a Membrane Permeabilization Mechanism *A. D. Whetton, S. J. Huang, and P. N. Monk* 1173

Evidence of Specific Binding of 15-Hydroxyeicosatetraenoic Acid to Pituitary Rat Cells *M. Rabier, A. Crastes de Paulet, and M. Damon* 1179

Multiple Species and Isoforms of Bordetella Pertussis Toxin Substrates *Philippe Brabet, Colette Pantaloni, Bruno Rouot, Medeleine Toutant, Adolfo Garcia-Sainz, Joël Bockaert, and Vincent Homburger* 1185

Synthesis of Enzymatically Active D-7,8-Dihydroneopterin-3′-Triphosphate *B. Zagalak, F. Neuheiser, U. Redweik, R. Bosshard, and W. Leimbacher* 1193

Insulin Stimulated Protein Kinase Activity in Rat Skeletal Muscle That Phosphorylates Ribosomal Protein S6 *Leslie B. Hecht and Daniel S. Straus* 1200

Inhibition of Prothrombin Activation by Factor X and Factor IX Gla-Peptides *Peter Wildgoose and Walter Kisiel* 1207

Age-Related Changes in the Regional Distribution of Hormones in the Male Rat Anterior Pituitary *Jerome M. Goldman, Ralph L. Cooper, Georgia L. Rehnberg, W. Keith McElroy, Joy F. Hein, and Kimberly C. Booth* 1213

Ketotifen Prevents Terbutaline-Induced Down-Regulation of β-Adrenoceptors in Guinea Pig Lung *T. Koshino, D. K. Agrawal, T. A. Townley, and R. G. Townley* 1221

Coupling of TGF-β-Induced Mitogenesis To G-Protein Activation in AKR-2B Cells *Uma S. Murthy, Mario A. Anzano, Jeffrey M. Stadel, and Russell Greig* 1228

Involvement of the Conserved Histidine-188 Residue in the L-Lactate Dehydrogenase from *Thermus caldophilus* GK24 in Allosteric Regulation by Fructose 1,6-Bisphosphate *Gabriele Schroeder, Hiroshi Matsuzawa, and Takahisa Ohta* 1236

Failure of Leiurus quinquestriatus Venom to Affect Potassium Movements in Pancreatic Islets *P. Lebrun, M. Hermann, J. P. Dehaye, J. Christophe, and A. Herchuelz* 1242

Mannose 6-Phosphate/Insulin-like Growth Factor II Receptor: The Two Types of Ligands Bind Simultaneously to One Receptor at Different Sites *Abdul Waheed, Thomas Braulke, Ulrich Junghans, and Kurt von Figura* 1248

Incorporation of Partially Purified Cation Channels from Cardiac Sarcolemmal Membrane into Planar Lipid Bilayers *Shin-ichi Nakao, Toshiro Hamamoto, Yasuo Kagawa, Reijyu Shimizu, Kenjiro Mori, and Hajime Hirata* 1255

Amiloride Increases the Sensitivity of Particulate Guanylate Cylase to Atrial Natriuretic Factor *Jörg-Martin Heim, Krassimira Ivanova, and Rupert Gerzer* 1263

19(*S*)-Hydroxyeicosatetraenoic Acid Is a Potent Stimulator of Renal Na^+-K^+ ATPase *Bruno Escalante, John R. Falck, Pendri Yadagiri, Lumin Sun, and Michal Laniado-Schwartzman* 1269

Effect of Monensin on Fluid-Phase and Receptor-Mediated Endocytosis by Rat Hepatocyte Monolayers *Jacqueline Thirion and Robert Wattiaux* 1275

Exact Localization of the Familial Dysbetalipoproteinemia-Associated HPAI Restriction Site in the Promoter Region of the APOC1 Gene
M. Smit, E. v.d. Kooij-Meijs, L. P. Woudt, L. M. Havekes, and R. R. Frants 1282

Cloning, Characterization, and Expression of a Human Insuline-like Growth Factor Binding Protein *Michael T. Brewer, Gary L. Stetler, Charles H. Squires, Robert C. Thompson, Walker H. Busby, and David R. Clemmons* 1289

Pattern of Repeating Aromatic Residues in Synexin: Similarity to the Cytoplasmic Domain of Synaptophysin *Carl E. Creutz, Sandra L. Snyder, Lisa D. Husted, Linda K. Beggerly, and Jay W. Fox* 1298

Intracellular pH Changes of Cultured Bovine Aortic Endothelial Cells in Response to ATP Addition *Takanari Kitazono, Koichiro Takeshige, Edward J. Cragoe, Jr., and Shigeki Minakami* 1304

Neutrophil Microsomes Biosynthesize Linoleate Epoxide (9,10-Epoxy-12-Octadecenoate), a Biological Active Substance *Takayuki Ozawa, Satoru Sugiyama, Mika Hayakawa, Fumio Taki, and Yoshihiro Hanaki* 1310

IF1 Inhibition of Mitochondrial F1-ATPase Is Correlated to Entrapment of Four Adenine or Guanine Nucleotides Including at Least One Triphosphate
A. Di Pietro, F. Penin, J. H. Julliard, C. Godinot, and D. C. Gautheron 1319

Gonadotropin-Releasing Hormone Specific Binding Sites in Uterine Leiomyomata
Arnon Wiznitzer, Miriam Marbach, Eli Hazum, Vaclav Insler, Yoav Sharoni, and Joseph Levy 1326

Developmental Changes in the Structural Organization of the Lectin Discoidin I Detected by Limited Proteolysis *Alfonso Valencia, Angel Pestaña, and Amparo Cano* 1332

Chemical Oxidation of 1-Methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP) and Its *in Vivo* Metabolism in Rat Brain and Liver
Pramod K. Arora, Naji J. Riachi, Sami I. Harik, and Lawrence M. Sayre 1339

Induction of a 58,000-Da Protein during Goldenrod Gall Formation
P. Carango, K. D. McCrea, W. G. Abrahamson, and M. I. Chernin 1348

Differential Binding of Monoiodinated Insulins to Muscle and Liver Derived Receptors and Activation of the Receptor Kinase
Charles F. Burant, Mary K. Treutelaar, Daniel E. Peavy, Bruce H. Frank, and Maria G. Buse 1353

Clostridium spiroforme Toxin Is a Binary Toxin Which ADP-Ribosylates Cellular Actin
Michel R. Popoff and Patrice Boquet 1361

Modification of Opioid Receptor Activity by Acid Phosphatase in Neuroblastoma × Glioma NG108-15 Hybrid Cells *Alan K. Louie, Junni Zhan, Ping-Yee Law, and Horace H. Loh* 1369

Structures and Actions of *Mytilus* Inhibitory Peptides
Tatsumi Hirata, Ichiro Kubota, Norio Iwasawa, Ikuo Takabatake, Tetsuya Ikeda, and Yojiro Muneoka 1376

SnRNP Core Protein Enrichment in the Nuclear Matrix
S. G. Harris and H. C. Smith 1383

1,25-Dihydroxyvitamin D_3 Stimulates $^{45}Ca^{2+}$-Uptake by Cultured Vascular Smooth Muscle Cells Derived from Rat Aorta *Tsutomu Inoue and Hiroyuki Kawashima* 1388

Molecular Cloning and Nucleotide Sequence of the cDNA for Human Liver Glutamate Dehydrogenase Precursor *Naoki Amuro, Mayumi Yamaura, Yoshitaka Goto, and Taro Okazaki* 1395

Macrophage Colony-Stimulating Factor Is Produced by Human T Lymphoblastoid Cell Line, CEM-ON: Identification by Amino-Terminal Amino Acid Sequence Analysis
Masayuki Takahashi, Yeong-Man Hong, Setsuko Yasuda, Masaaki Takano, Kazuyoshi Kawai, Satoru Nakai, and Yoshikatsu Hirai 1401

Native Fluorescence of Platelets from Patients with Occlusive Arterial Disease
Wolfgang Lohmann and Chris Lohmann 1410

Atrial Natriuretic Factor Inhibits Phosphate Uptake in Opossum Kidney Cells: A Model of Renal Proximal Tubules *Masamichi Nakai, Masaaki Fukase, Yoshikazu Kinoshita, and Takuo Fujita* 1416

Role of Salivary Epidermal Growth Factor in the Maintenance of Physicochemical Characteristics of Oral and Gastric Mucosal Mucus Coat *J. Sarosiek, J. Bilski, V. L. N. Murty, A. Slomiany, and B. L. Slomiany* 1421

Attenuation of Porphyrinogen Oxidation by Glutathione *in Vitro* and Reversal by Porphyrinogenic Trace Metals *James S. Woods* 1428

Mass Spectrometry Studies of a Novel Digoxin-like Substance (DLIS-2) Isolated from Human Plasma Ultrafiltrate *Amitava Dasgupta, Sohail Malik, Suhail Ahmad, and Margaret Kenny* 1435

The Effect of Structural Changes in a Polyamine Backbone on Its DNA-Binding Properties *Kent D. Stewart* 1441

Detection of a Rabbit Uteroglobin-like Protein in Human Neonatal Tracheobronchial Washings *Ramasubbareddy Dhanireddy, Tadahiro Kikukawa, and Anil B. Mukherjee* 1447

Localization of the Insulin-Sensitive Phosphatidylinositol Glycan at the Outer Surface of the Cell Membrane *Jose F. Alvarez, Isabel Varela, Juan M. Ruiz-Albusac, and Jose M. Mato* 1455

Inhibition of CCl_4 Metabolism by Oxygen Varies between Isoenzymes of Cytochrome *P*-450 *Raymond F. Burk, Kristina E. Hill, and James M. Lane* 1463

Myelin Basic Protein Binds GTP at a Single Site in the N-Terminus *C. K. Chan, J. Ramwani, and M. A. Moscarello* 1468

Direct Modulation of Insulin Receptor Protein Tyrosine Kinase by Vanadate and Anti-insuline Receptor Monoclonal Antibodies *Roberto Gherzi, Cinzia Caratti, Gabriella Andraghetti, Stefano Bertolini, Antonio Montemurro, Giorgio Sesti, and Renzo Cordera* 1474

Role for Protein Kinase C in the Modulation of Glomerular PGE_2 Production by Angiotensin II *Patricia A. Craven, Mark C. Patterson, and Frederick R. DeRubertis* 1481

Decreased Extracellular Matrix Production in Scurvy Involves a Humoral Factor Other than Ascorbate *Ikuko Oyamada, Timothy A. Bird, and Beverly Peterkofsky* 1490

Effects of a Protein Kinase C Inhibitor, K-252a, on Human Polymorphonuclear Neutrophil Responsiveness *Robert J. Smith, James M. Justen, and Laurel M. Sam* 1497

Regulation of mRNA Levels for Cellular Retinol Binding Protein in Rat Sertoli Cells by Cyclic AMP and Retinol *W. Eskild, O. Øyen, S. Beebe, T. Jahnsen, and V. Hansson* 1504

ERRATA

Volume 150, Number 2, January 29, 1988: Sang Joo Kim, "Formation of Lipoxins by Alveolar Macrophages," pp. 870–876 1511

Volume 151, Number 2, March 15, 1988: G. Jayarama Bhat and G. Padmanaban, "Heme Regulates Cytochrome *P*-450 Gene Transcription Elongation," pp. 737–742 1511

Author Index for Volume 152 1512

Volume 153, Number 1, May 31, 1988

AUTHOR INDEX, Volume 153, Number 1, May 31, 1988 iii

Multiple Forms of Atrial Natriuretic Factor Receptor in Human Placenta *Pampa Roy, Ulhas Naik, and Indira Sen* 1

Evidence for Ecto-Protein Kinase Activity on the Surface of Human Neutrophils *Kathryn E. Dusenbery, John R. Mendiola, and Keith M. Skubitz* 7

Does the Hydrolysis of Inositol Phospholipids Lead to the Opening of Voltage-Operated Ca^{2+} Channels in Guinea Pig Ileum? Studies with Fluoride Ions and Caffeine *Stephen P. Watson, Alison F. Stanley, and Toshiyuki Sasaguri* 14

No Direct Correlation between Ca^{2+} Mobilization and Dissociation of G_i during Platelet Phospholipase A_2 Activation *Michael F. Crouch and Eduardo G. Lapetina* 21

Construction of Immunogens for Synthetic Malaria Vaccines *Dominique Lise, Christine Dubeaux, Diana Tello, Dominique Mazier, Michel Jolivet, David H. Schlesinger, Francoise Audibert, and Louis Chedid* 31

Evidence of Autocrine Regulation in Human Hepatoma Cell Lines *Ting-Fen Tsai, Yar-Khing Yauk, Chen-Kung Chou, Ling-Pei Ting, Chungming Chang, Cheng-po Hu, Shou-Hwa Han, and Tsung-Sheng Su* 39

Glycoproteins Synthesized by Cultured Cardiac Valve Endothelial Cells: Unique Absence of Fibronectin Production *Christopher M. Johnson and Susan C. Helgeson* 46

Phorbol Ester Modulates Serotonin-Stimulated Phosphoinositide Breakdown in Cultured Vascular Smooth Muscle Cells *Masayoshi Go, Mitsuhiro Yokoyama, Hozuka Akita, and Hisashi Fukuzaki* 51

Molecular Defect in Human Acatalasia Fibroblasts *Dana R. Crawford, Marc-Edouard Mirault, Rémy Moret, Irène Zbinden, and Peter A. Cerutti* 59

Linoleic Acid Is a Potent Activator of Protein Kinase C Type III-α Isoform in Pancreatic Acinar Cells: Its Role in Amylase Secretion *Marie W. Wooten and Robert W. Wrenn* 67

Near Stoichiometric, Irreversible Inactivation of Bacterial Collagenases by *o*-Chloranil (3,4,5,6-Tetrachloro-1,2-benzoquinone) *Pirkko-Liisa Makinen and Kauko K. Makinen* 74

In Vitro and *in Vivo* Inhibition of Human Small Cell Lung Carcinoma (NCI-H69) Growth by a Somatostatin Analog *John E. Taylor, Arthur E. Bogden, Jacques-Pierre Moreau, and David H. Coy* 81

Iron–Sulfur Centers Involved in Methanogenic Electron Transfer in *Methanobacterium thermoautotrophicum* (δ-H) *Kim R. Rogers, Kevin Gillies, and Jack R. Lancaster, Jr.* 87

Biosynthesis of the Epidermal Growth Factor Receptor: Post-translational Glycosylation-Independent Acquisition of Tyrosine Kinase Autophosphorylation Activity *Lawrence J. Slieker, Todd M. Martensen, and M. Daniel Lane* 96

Quick-Freeze Differential Scanning Calorimetry and Saturation Transfer Electron Spin Resonance: Novel Techniques for Assessing Phase Transitions in Biological Membranes *Alejandro G. Marangoni and David W. Stanley* 104

Dexamethasone Inhibits the Cytotoxic Activity of Tumor Necrosis Factor *Masafumi Tsujimoto, Nobutaka Okamura, and Hideki Adachi* 109

Selective Transcription of an Insulin-Regulated Gene in Nuclear Extracts of Rat Hepatoma Cells *Tomokazu Sato, Andrew C. Larner, and Joseph Larner* 116

Carbamazepine Inhibits Electroconvulsive Shock-Induced Inositol Trisphosphate (IP_3) Accumulation in Rat Cerebral Cortex and Hippocampus *Robert E. Vadnal and Nicolas G. Bazan* 128

Multiple Ionic Forms of Ornithine Decarboxylase Differ in Degree of Phosphorylation *Ted Peng and James F. Richards* 135

Insulin Action in Early Embryonic Life: Anti-insulin Receptor Antibodies Retard Chicken Embryo Growth but Not Muscle Differentiation *in Vivo* *Matias Girbau, Maxine A. Lesniak, Juan A. Gomez, and Flora De Pablo* 142

Differential Responses of Mouse UDP-Glucuronosyltransferases and β-Glucuronidase to Disulfiram and Related Compounds *Demaris Bailey Ford and Ann M. Benson* 149

Effect of Okadaic Acid on Phosphorylation–Dephosphorylation of Myosin Light Chain in Aortic Smooth Muscle Homogenate *Ferenc Erdödi, Anikó Rokolya, Joseph Di Salvo, Michael Bárány, and Kate Bárány* 156

Histone H4 mRNA Is Stored as a Small Cytoplasmic RNP during the G_2 Phase in *Physarum polycephalum* *Marcelle L. Wilhelm, Barbara Toublan, Ricardo A. Fujita, and F. Xavier Wilhelm* 162

KDN-Glycoprotein: A Novel Deaminated Neuraminic Acid-Rich Glycoprotein Isolated from the Vitelline Envelope of Rainbow Trout Eggs *Sadako Inoue, Akiko Kanamori, Ken Kitajima, and Yasuo Inoue* 172

Elucidation of the 2-Aminoethylphosphonate Biosynthetic Pathway in *Tetrahymena pyriformis* *Robert J. Barry, Elise Bowman, Michael McQueney, and Debra Dunaway-Mariano* 177

Alkaline Hydrolysis and Multiple Site Autophosphorylation Differ for Two Forms of the Epidermal Growth Factor Receptor *Ronald E. Gates and Lloyd E. King, Jr.* 183

Evidence for Mitochondrial DNA Damage by Lipid Peroxidation *Andrew M. Hruszkewycz* 191

Restriction Fragment Analysis Confirms the Position 33 Mutation in Transthyretin from an Israeli Patient (SKO) with Familial Amyloidotic Polyneuropathy *Daniel R. Jacobson, Frances Santiago-Schwarz, and Joel N. Buxbaum* 198

Human B and T Lymphocytes Convert Leukotriene A_4 into Leukotriene B_4 *Björn Odlander, Per-Johan Jakobsson, Anders Rosén, and Hans-Erik Claesson* 203

Cloning, Nucleotide Sequence, and Characterization of a New Zealand Rabbit Metallothionein-I Gene *You C. Tam, Arvind Chopra, Manuel Hassan, and Jean-Paul Thirion* 209

Isolation and Characterization of a Platelet Surface Collagen Binding Complex Related to VLA-2 *Samuel A. Santoro, Sanjay M. Rajpara, William D. Staatz, and Virgil L. Woods, Jr.* 217

Reconstitution of Transmembrane K^+ Transport with a 53-kDa Mitochondrial Protein *Joyce J. Diwan, Teresa Haley, and D. Rao Sanadi* 224

Existence of Different Populations of the Dendrotoxin I Binding Protein Associated with Neuronal K^+ Channels *Hubert Rehm and Michel Lazdunski* 231

Cloning, Structure, and Expression of a cDNA Encoding the Human Androgen Receptor *J. Trapman, P. Klaassen, G. G. J. M. Kuiper, J. A. G. M. van der Korput, P. W. Faber, H. C. J. van Rooij, A. Geurts van Kessel, M. M. Voorhorst, E. Mulder, and A. O. Brinkmann* 241

Only One of the Origin Binding Forms of SV40 T Antigen Has Helicase Activity *Swati Palit Deb and Kathryn Partin* 249

Hydrazine Radical Formation Catalyzed by Rat Microsomal NADPH-Cytochrome *P*-450 Reductase *Atsuko Noda, Hiroshi Noda, Ayako Misaka, Hideki Sumimoto, and Kiyoshi Tatsumi* 256

Evidence for a Single Active-Site Cysteinyl Residue in the Streptococcal NADH Peroxidase *Leslie B. Poole and Al Claiborne* 261

Conversion of 5β-Cholestane-3α,7α,12α,26-tetrol into 3α,7α,12α-Trihydroxy-5β-cholestanoic Acid by Rabbit Liver Mitochondria *Helena Dahlbäck, Henry Danielsson, Maria Gustafsson, Jan Sjövall, and Kjell Wikvall* 267

Direct Detection of Paramagnetic Species in Adriamycin Perfused Rat Hearts *L. Costa, V. Malatesta, F. Morazzoni, R. Scotti, E. Monti, and L. Paracchini* 275

Erythroid Differentiation Factor Can Modulate Follicular Granulosa Cell Functions *Hiromu Sugino, Takanori Nakamura, Yoshihisa Hasegawa, Kaoru Miyamoto, Yumiko Abe, Masao Igarashi, Yuzuru Eto, Hiroshiro Shibai, and Koiti Titani* 281

The Identification of a Heparin-Binding Protein on the Surface of Bovine Sperm *Robert E. Hurst, Richard L. Bynum, Sharon E. Einfeldt, and Johnny B. Roy* 289

The Mosquito Larvicidal Activity of 130-kDa δ-Endotoxin of *Bacillus thuringiensis* Var. Israelensis Resides in the 72-kDa Amino-Terminal Fragment *Manu Pao-intara, Chanan Angsuthanasombat, and Sakol Panyim* 294

Site-Directed Mutagenic Replacement of Glu-461 with Gln in β-Galactosidase (*Escherichia coli*): Evidence That Glu-461 Is Important for Activity *D. E. Bader, M. Ring, and R. E. Huber* 301

Effect of Insulin on the Induction by Dexamethasone of Glucose- 6-Phosphohydrolase and Translocase Activities in Cultured Hepatoma Cells *Rebecca C. Garland* 307

Specific Phosphorylation of the β Subunit of eIF-2 Factor from Brain by Three Different Protein Kinases *Alberto Alcazar, Enrique Mendez, Juan L-Fando, and Matilde Salinas* 313

Synergistic Cytotoxic Effect of Tiazofurin and Ribavirin in Hepatoma Cells *Yutaka Natsumeda, Yasukazu Yamada, Yasufumi Yamaji, and George Weber* 321

Molecular Cloning, Sequence Analysis, and Expression of a Human Liver cDNA Coding for Fructose-6-P,2-kinase: Fructose-2,6-bisphosphatase *Joseph Algaier and Kosaku Uyeda* 328

Nonhistone Protein HMG1 Removes the Transcriptional Block Caused by Left-Handed Z-Form Segment in a Supercoiled DNA *Shou Waga, Shigeki Mizuno, and Michiteru Yoshida* 334

Identification of a Protein Kinase Activity in Rabbit Reticulocytes That Phosphorylates the mRNA Cap Binding Protein *E. Lynne McMullin, David W. Haas, Richard D. Abramson, Robert E. Thach, William C. Merrick, and Curt H. Hagedorn* 340

Angiogenic Activity of Adipose Tissue *K. J. Silverman, D. P. Lund, B. R. Zetter, L. L. Lainey, J. A. Shahood, D. G. Freiman, J. Folkman, and A. C. Barger* 347

The Interaction of Aminogroups with Pyrroloquinoline Quinone as Detected by the Reduction of Nitroblue Tetrazolium *Rudolf Flückiger, Thomas Woodtli, and Paul M. Gallop* 353

Amino Acid Sequence of *S*-Adenosyl-L-homocysteine Hydrolase from *Dictyostelium discoideum* as Deduced from the cDNA Sequence *Judith Kasir, Robert R. Aksamit, Peter S. Backlund, Jr., and Giulio L. Cantoni* 359

Interaction of Antiglucocorticoid RU 486 with Rat Kidney Clucocorticoid Receptor *M. Y. Kalimi and M. K. Agarwal* 365

Phorbol Esters Stimulate the Potassium-Induced Release of Cholecystokinin from Slices of Cerebral Cortex, Caudato-Putamen, and Hippocampus Incubated *in Vitro* *L. R. Allard and M. C. Beinfeld* 372

Increase of Sialyltransferase Activity in the Small Intestine Following Thermal Injury in Rats *Shu-heh W. Chu, Edward A. Carter, Ronald G. Tompkins, and John F. Burke* 377

Nerve Growth Factor Transiently Increases Tetrahydrobiopterin and Total Biopterin Contents of Pheochromocytoma PC12h Cells *Hiroko Suzuki, Nobuo Nakanishi, and Shozo Yamada* 382

pp60$^{c\text{-}src}$ Kinase Activity in Bovine Coronary Extracts Is Stimulated by ATP *Joseph Di Salvo, Donetta Gifford, and Anastasia Kokkinakis* 388

Quantitative Tritium Exchange of [^{3}H]Aflatoxin B_1 during Penetration through Isolated Human Skin *R. T. Riley, B. W. Kemppainen, and W. P. Norred* 395

Reduction in Tumor Necrosis Factor Receptor Affinity and Cytotoxicity by Glucocorticoids *Frederick C. Kull, Jr.* 402

Induction of Cytosolic Aspartate Aminotransferase by Glucagon in Primary Cultured Rat Hepatocytes *Yoshiyuki Horio, Hiroyuki Fukui, Masato Taketoshi, Tatsuya Tanaka, and Hiroshi Wada* 410

Inhibition by GDPβS of Agonist-Activated Phospholipase C in Human Platelets Requires Cell Permeabilization *Gregory L. Kucera and Susan E. Rittenhouse* 417

Regulation of Hepatic Cholesterol Biosynthesis by Fatty Acids: Effect of Feeding Olive Oil on Cytoplasmic Acetoacetyl-Coenzyme A Thiolase, β-Hydroxy-β-methylglutaryl-CoA Synthase, and Acetoacetyl-Coenzyme A Ligase *Walid H. Salam, Lauren M. Cagen and Murray Heimberg* 422

Characterization of a Novel Transformation-Sensitive Heat-Shock Protein (HSP47) That Binds to Collagen *Kazuhiro Nagata, Shinsuke Saga, and Kenneth M. Yamada* 428

Amino Acid Sequence of Porcine Heart Fumarase *James C. Sacchettini, Mark W. Frazier, David C. Chiara, Leonard J. Banaszak, and Gregory A. Grant* 435

Preparation and Characterization of Monoclonal Antibodies against a Form of Hamster Liver Cytochrome *P*-450 Highly Specific to Aflatoxin B_1 *Momoko Sunouchi, Yukio Ishimi, Keinosuke Mizokami, Morio Fukuhara, Akira Takanaka, Fumio Hanaoka, and Masa-atu Yamada* 441

Decreased Epstein–Barr Virus-Induced Transformation, and Elevated 2-5A Synthetase and RNase L Activity in Peripheral Blood Mononuclear Cells from Patients Treated with Recombinant Interferon-α 2b *Gerald E. Fronko, Robert J. Suhadolnik, Eric C. Vonderheid, Katalin Karikó, Nancy L. Reichenbach, Kenneth D. Chavin, and Earl E. Henderson* 448

Protein Kinase C Modulates Phospholipase C and Increases Arachidonic Acid Release in Bradykinin-Stimulated MDCK Cells *Didier Portilla, Mary Mordhorst, William Bertrand, and Aubrey R. Morrison* 454

A Splicing Defect Due to an Exon–Intron Junctional Mutation Results in Abnormal β-Hexosaminidase α Chain mRNAs in Ashkenazi Jewish Patients with Tay-Sachs Disease *Kousaku Ohno and Kunihiko Suzuki* 463

In Vitro Translation of Rabbit Lung Clara Cell Secretory Protein mRNA *Ram P. Gupta and Gary E. R. Hook* 470

Ajoene Inhibition of Platelet Aggregation: Possible Mediation by a Hemoprotein *Moideen P. Jamaluddin, Lissy K. Krishnan, and Ancy Thomas* 479

ERRATA

Volume 150, Number 2, January 29, 1988: Sukadev Lavu, Jeff Clark, Rupendra Swarup, Kouji Matsushima, Kondiah Paturu, Joel Moss, and Hsiang-Fu Kung, "Molecular Cloning and DNA Sequence Analysis of the Human Guanine Nucleotide-Binding Protein Goα," pp. 811–815 487

Volume 150, Number 3, February 15, 1988: Martin L. Pall, "Cyclic AMP Control of GTP Pools in *Saccaromyces cerevisiae*," pp. 1144–1148 487

Volume 153, Number 2, June 16, 1988

AUTHOR INDEX, Volume 153, Number 2, June 16, 1988 iii

Permissive Action of Glucocorticoids on Catecholamine-Induced Lipolysis: Direct *in Vitro* Effects on the Fat Cell β-Adrenoreceptor-Coupled Adenylate Cyclase System *Danièle Lacasa, Brigitte Agli, and Yves Giudicelli* 489

Assembly of M13 and M13am8H1R1 Procoat Protein into Microsomes Is Stimulated by Rabbit Reticulocyte Lysate and ATP *Maria Sagstetter and Richard Zimmermann* 498

Isolation and Characterization of a Novel Lipoprotein Particle from Human Placental Extracts *M. C. Park, A. Cayatte, and M. T. R. Subbiah* 502

Disclosure by Triton X-100 of NMDA-Sensitive [^{3}H]Glutamate Binding Sites in Brain Synaptic Membranes *Kiyokazu Ogita and Yukio Yoneda* 510

Histone Phosphorylation during Repression of Proliferation in a Lower Eucaryote *Physarum polycephalum* *Jan Fronk and Kazimierz Toczko* 518

Intraliposomal Nucleotides Change the Kinetics of Reconstituted Cytochrome *c* Oxidase from Bovine Heart but Not from *Paracoccus denitrificans* *Fritz-Joachim Hüther and Bernhard Kadenbach* 525

Effect of 3-Methylindole on Respiratory Ethane Production in Selenium and Vitamin E Deficient Rats *Anthony L. Kiorpes, John W. Sword, and William G. Hoekstra* 535

Plasminogen Activator Release from Cultured Murine Mast Cells *Jennifer S. Bartholomew and David E. Woolley* 540

In Vitro Processing of Tropoelastin: Investigation of a Possible Transport Function Associated with the Carboxy-Terminal Domain *Leonard E. Grosso and Robert P. Mecham* 545

Ab Initio Molecular Orbital Study of the Mispairing Ability of a Nucleotide Base Analog, N^4-Aminocytosine *Misako Aida, Kazuo Negishi, Hikoya Hayatsu, and Mitsuaki Maeda* 552

On the Copper Transfer between Dopamine β-Monooxygenase and Cu-Thionein *Kira A. Markossian, Varduhi Z. Melkonyan, Norair A. Paitian, and Robert M. Nalbandyan* 558

Epidermal Growth Factor Binding in Rat Uterus during the Peri-Implantation Period *Chandan Chakraborty, Ossama W. Tawfik, and S. K. Dey* 564

Possible Participation of Calmodulin in Stimulation of Leucine Transport by Concanavalin A in Human Lymphocytes *Kumie Sato, Yasuhide Mitsumoto, and Tetsuro Mohri* 570

Tumor Necrosis Factor Stimulates DNA Synthesis in the Liver of Intact Rats *Kenneth R. Feingold, Mounzer Soued, and Carl Grunfeld*, with the technical assistance of *Arthur H. Moser, Jennifer A. Verdier, and Heather G. DoVale* 576

Dexamethasone Action Inhibits the Release of Arachidonic Acid from Phosphatidylcholine during the Suppression of Yeast Phagocytosis in Macrophage Cultures *Jeanne L. Becker, Robert J. Grasso, and John S. Davis* 583

Carbon Tetrachloride-Induced Inhibition of Protein Kinase C in Isolated Rat Hepatocytes *Giuseppe Poli, Emanuele Albano, Mario U. Dianzani, Edon Melloni, Sandro Pontremoli, Umberto M. Marinari, Maria Adelaide Pronzato, and Damiano Cottalasso* 591

Intrinsic Multidrug Resistance Phenotype of Chinese Hamster (Rodent) Cells in Comparison to Human Cells *Radhey S. Gupta* 598

Stimulation of Intestinal Secretion of Apolipoprotein AI by Triiodothyronine *Henry G. Wilcox, Patrick Tso, and Murray Heimberg* 606

Oxidation of Glycerol to Formaldehyde by Rat Liver Microsomes *Debra K. Winters, Liviu A. Clejan, and Arthur I. Cederbaum* 612

Direct Demonstration That the Deficient Oxidation of Very Long Chain Fatty Acids in X-Linked Adrenoleukodystrophy Is due to an Impaired Ability of Peroxisomes to Activate Very Long Chain Fatty Acids *R. J. A. Wanders, C. W. T. van Roermund, M. J. A. van Wijland, R. B. H. Schutgens, H. van den Bosch, A. W. Schram, and J. M. Tager* 618

Heparin Inhibits the Inositol 1,4,5-Trisphosphate-Dependent, but Not the Independent, Calcium Release Induced by Guanine Nucleotide in Vascular Smooth Muscle *Sei Kobayashi, Avril V. Somlyo, and Andrew P. Somlyo* 625

Ca^{2+}/Calmodulin-Sensitive Inositol 1,4,5-Trisphosphate 3-Kinase in Rat and Bovine Brain Tissues *Kazunaga Takazawa, Heloisa Passareiro, Jacques E. Dumont, and Christophe Erneux* 632

Localization of the Toxic Site of *Naja mossambica* Cardiotoxins: Small Synthetic Peptides Express an *in Vivo* Lethality *P. Marchot, P. E. Bougis, B. Ceard, J. Van Rietschoten, and H. Rochat* 642

Rapid Down-Regulation of Protein Kinase C in (Chediak-Higashi Syndrome) Beige Mouse by Phorbol Ester *Masahiko Ito, Fuminori Tanabe, Yoshiyuki Takami, Akihiko Sato, and Shiro Shigeta* 648

Insulin Resistance by Unprocessed Insulin Proreceptors Point Mutation at the Cleavage Site *Masashi Kobayashi, Toshiyasu Sasaoka, Yasumitsu Takata, Osamu Ishibashi, Masaaki Sugibayashi, Yukio Shigeta, Akitaka Hisatomi, Etsuo Nakamura, Mikio Tamaki, and Hiroshi Teraoka* 657

Detection of a Lag Phase in Gonadotropin-Releasing Hormone Stimulated Synthesis of Lutropin Peptide Chains in Cultured Rat Anterior Pituitary Cells
Anna Starzec, Marian Jutisz, and Raymond Counis 664

6-Nitrocholesterol Inhibits 3-Hydroxy-3-methylglutaryl Coenzyme A Reductase and Tumor Cell Growth *Edward J. Parish, Kendell L. Dixon, Sarawanee Chitrakorn, Frederick K. Taylor, Bang Luu, and Guy Ourisson* 671

Arachidonic Acid Can Induce Leukotriene C_4 Formation by Purified Human Eosinophils in the Absence of Other Stimuli
Paul T. M. Kok, Maartje L. Hamelink, Arda M. Kijne, Jan Verhagen, Leo Koenderman, and Pieter L. B. Bruynzeel 676

Carbachol and KC1-Induced Changes in Intracellular Free Calcium Concentration in Isolated, Fura-2 Loaded Smooth-Muscle Cells from the Anterior Byssus Retractor Muscle of *Mytilus edulis* *N. Ishii, A. W. M. Simpson, and C. C. Ashley* 683

Calcium Ionophore and Phorbol Myristate Acetate Synergistically Inhibited Proteoglycan Biosynthesis in Articular Chondrocytes by a Prostaglandin Independent Mechanism *M. Bouakka, P. Legendre, V. Jouis, M. Langris, R. Béliard, G. Loyau, and J. Bocquet* 690

The Effects of *Clostridium perfringens* Enterotoxin on Intracellular Levels or Transport of Uridine, Thymidine, and Leucine Do Not Fully Explain Enterotoxin-Induced Inhibition of Macromolecular Synthesis in Vero Cells
Keren I. Hulkower and Bruce A. McClane 699

Thrombospondin Is Present in Articular Cartilage and Is Synthesized by Articular Chondrocytes *Raymond R. Miller and Cahir A. McDevitt* 708

Primapterin, Anapterin, and 6-Oxo-primapterin, Three New 7-Substituted Pterins Identified in a Patient with Hyperphenylalaninemia
H.-Ch. Curtius, Th. Kuster, A. Matasovic, N. Blau, and J.-L. Dhondt 715

The Effect of Opiates upon Prostatic Carcinoma Cell Growth *Timothy D. Moon* 722

Cytochrome *P*-450 Induction by Phenobarbital (PB) Is Inhibited by 12-*O*-Tetradecanoylphorbol-13-acetate (TPA): Evidence That Protein Kinase C Regulates Induction *David F. Steele and Bruce B. Virgo* 728

Fructose Prevents 1-Methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP)-Induced ATP Depletion and Toxicity in Isolated Hepatocytes
Donato Di Monte, Martha S. Sandy, Logan Blank, and Martyn T. Smith 734

β-Thalassemia Due to a T→A Mutation within the ATA Box
Y. J. Fei, T. A. Stoming, G. D. Efremov, D. G. Efremov, R. Battacharia, J. M. Gonzalez-Redondo, C. Altay, A. Gurgey, and T. H. J. Huisman 741

The Subunit Composition of Portunus trituberculatus Hemocyanin Polymers
Byung Sun Yoo, Sang Bog Kim, Jeoung Ho Lee, and Kyu Hwan Yang 748

Mutant Isolation and Cloning of the Gene Encoding Protease VII from *Escherichia coli*
Keijiro Sugimura 753

Mechanism of the EPSP Synthase Catalyzed Reaction: Evidence for the Lack of a Covalent Carboxyvinyl Intermediate in Catalysis *Jamie Wibbenmeyer, Lorna Brundage, Stephen R. Padgette, John J. Likos, and Ganesh M. Kishore* 760

L-Leucine and Its Analog: Specific Inhibitors for *S*-Benzyl-L-Cysteine-*p*-nitroanilide-Hydrolyzing Enzyme in *Escherichia coli B*
Kousaku Murata, Yoshitaka Iba, Yoshiharu Inoue, and Akira Kimura 767

^{19}F Nuclear Magnetic Resonance Spectroscopy Study of the Complex of 2-Benzyl-4-oxo-5,5,5-trifluoropentanoic Acid and Carboxypeptidase A
Carroll Teater, Damian Grobelny, and Richard E. Galardy 773

Oxygenation Mechanism in the Oxidation of Xenobiotic Aldehyde to Carboxylic Acid by Mouse Hepatic Microsomes *Ikuo Yamamoto, Kazuhito Watanabe, Shizuo Narimatsu, and Hidetoshi Yoshimura* 779

Homology of Histone H1 Variants with Adenine Nucleotide-Binding Proteins
Jukka Ristiniemi and Jouko Oikarinen 783

The Effect of Tumor Necrosis Factor/Cachectin on Follicle-Stimulating Hormone-Induced Aromatase Activity in Cultured Rat Granulosa Cells
Naoya Emoto and Andrew Baird 792

Ability of 15-Hydroxyeicosatrienoic Acid (15-OH-20:3) to Modulate Macrophage Arachidonic Acid Metabolism *Robert S. Chapkin, Craig C. Miller, Scott D. Somers, and Kent L. Erickson* 799

Platelet Activating Factor and Leukotriene B_4 Induce Hyperpolarization of Human Endothelial Cells but Depolarization of Neutrophils
Richard Lerner, Peter Lindström, and Jan Palmblad 805

Epicardial Release of Immunoreactive Atrial Natriuretic Peptides in Inside-Out Perfused Rabbit Atria *Kyung Woo Cho, Kyung Hwan Seul, Suhn Hee Kim, Hoon Ryu, Kyung Mee Seul, and Gou Young Koh* 811

Analysis of Growth Factors in Renal Cell Carcinoma
Takahisa Nakamoto, Akihiro Usui, Kenji Oshima, Hideaki Ikemoto, Shinji Mitani, and Tsuguru Usui 818

Phosphorylation, Anti-HIV Activity, and Cytotoxicity of 3′-Fluorothymidine
E. Matthes, Ch. Lehmann, D. Scholz, H. A. Rosenthal, and P. Langen 825

p*K* Shift of Functional Group in Mechanochemical Coupling Due to Hydrophobic Effect: Evidence for an Apolar–Polar Repulsion Free Energy in Water
Dan W. Urry, King-Kwo Chang, Hong Zhang, and Kari U. Prasad 832

Soybean Lipoxygenase-Catalyzed Formation of Lipoxin A and Lipoxin B Isomers from Arachidonic Acid via 5,15-Dihydroperoxyeicosatetraenoic Acid
Dai-Eun Sok, Taek San Phi, Chang Hee Jung, Yun Su Chung, and Jung Bu Kang 840

Immunocytochemical Localization of the Ca^{2+}-ATPase Polypeptide in Human Platelets
George H. Herbener and William L. Dean 848

Effect of Selenium Status on mRNA Levels for Glutathione Peroxidase in Rat Liver
Mohammad S. Saedi, Carey G. Smith, Jonathan Frampton, Ian Chambers, Paul R. Harrison, and Roger A. Sunde 855

Mutation of Active Site Residues in Synthetic T4-Lysozyme Gene and Their Effect on Lytic Activity *Naveen N. Anand, Eric R. Stephen, and Saran A. Narang* 862

Regulation of Heme Synthesis in HepG2 Human Hepatoma Cells by Dimethyl Sulfoxide
Richard A. Galbraith, Shigeru Sassa, and Hiroyoshi Fujita 869

In Vivo Phosphorylation of Isocitrate Lyase from *Escherichia coli* $D_5H_3G_7$
J. C. Hoyt and H. C. Reeves 875

Polyamine Distribution among Maize Embryonic Tissues and Its Relation to Seed Germination *Gabriela Sepúlveda and Estela Sánchez de Jiménez* 881

Biochemical Deficiencies of Coenzyme Q_{10} in HIV-Infection and Exploratory Treatment
Karl Folkers, Peter Langsjoen, Yoshio Nara, Kazumasa Muratsu, Jan Komorowski, Philip C. Richardson, and Thomas Henry Smith 888

Volume 153, Number 3, June 30, 1988

AUTHOR INDEX, Volume 153, Number 3, June 30, 1988 iii

Reduction of Transferrin Receptor Expression by Interferon γ in a Human Cell Line Sensitive to Its Antiproliferative Effect
M.-F. Bourgeade, F. Silbermann, M. N. Thang, and F. Besancon 897

Interaction of Propylthiouracil and Its Precursors with Horseradish Peroxidase
Ana Zaton and Eduardo Ochoa de Aspuru 904

Voltage-Dependence of Nitrendipine Provides Direct Evidence for Dihydropyridine Receptor Coupling to Calcium Channels in Intact Cat Adrenals
C. R. Artalejo, M. G. López, M. A. Moro, C. F. Castillo, R. de Pascual, and A. G. García 912

Desensitization of Pituitary Gonadotropes by Mediators of LH Release
John P. Chang, Janelle S. Graeter, and Kevin J. Catt 919

Phosphorylation of the p220 Subunit of eIF-4F by cAMP Dependent Protein Kinase and Protein Kinase C *in Vitro* *E. Lynne McMullin, William E. Hogancamp, Richard D. Abramson, William C. Merrick, and Curt H. Hagedorn* 925

Stimulation and Inhibition of Iron-Dependent Lipid Peroxidation by Desferrioxamine *J. Mark Braughler, Robin L. Chase, and Jeffrey F. Pregenzer* 933

A Novel Site of Action of a High-Affinity A_1 Adenosine Receptor Antagonist *Vickram Ramkumar and Gary L. Stiles* 939

Comparative Effects of Two Sulfhydryl Reagents on the Activities of a Multifunctional Red Cell Enzyme: Bisphosphoglycerate Mutase *Raymonde Rosa and Marie-Claude Calvin* 945

Oxygen Concentration Regulated EGF-Induced Proliferation and EGF-Receptor Down Regulation *Deborah A. Wing, Glenda D. Talley, and Thomas G. Storch* 952

Effects of Indole Alkaloids on Multidrug Resistance and Labeling of P-Glycoprotein by a Photoaffinity Analog of Vinblastine *William T. Beck, Margaret C. Cirtain, Constance J. Glover, Ronald L. Felsted, and Ahmad R. Safa* 959

Excretion of Cholera Toxin from *Escherichia coli*: A Potential Oral Vaccine for Cholera *Ujjala Dasgupta, Indrajit Guhathakurta, and Jyotirmoy Das* 967

A New and Suitable Reconstructed System for NADPH-Dependent Microsomal Lipid Peroxidation *Hisanori Minakami, Hiroyuki Arai, Minoru Nakano, Katsuaki Sugioka, Shingo Suzuki, and Akemi Sotomatsu* 973

Protective Effect of Long-Term Ammonium Ingestion against Acute Ammonium Intoxication *María-Dolores Miñana, Vicent Felipo, and Santiago Grisolía* 979

Dual Effect of Glucose on Cytoplasmic Free Ca^{2+} Concentration and Insulin Release Reflects the β-Cell Being Deprived of Fuel *Thomas Nilsson, Per Arkhammar, and Per-Olof Berggren* 984

Regulation of Protein Phosphorylation by Insulin and an Insulinomimetic Oligosaccharide in 3T3-L1 Adipocytes and Fao Hepatoma Cells *Lee A. Witters, Thomas D. Watts, Gwyn W. Gould, Gustav E. Lienhard, and E. Michael Gibbs* 992

β-Cell Contact and Insulin Release *M. Linzel, A. Ciccarelli, and R. C. Merrell* 999

γ-Aminobutyric Acid/Benzodiazepine Receptor Protein Carries Binding Sites for Both Ligands on Both Major Peptide Subunits *Michel Bureau and Richard W. Olsen* 1006

Induction of Adenylate Cyclase in a Mammary Carcinoma Cell Line by Human Corticosteroid-Binding Globulin *Atif M. Nakhla, M. Saeed Khan, and William Rosner* 1012

Evidence of a Novel Association of Unsaturated Fatty Acids with Gc (Vitamin D-Binding Protein) *Merfyn H. Williams, Eldwin L. Van Alstyne, and Robert M. Galbraith* 1019

Phosphorylation Activity Association with Plasma Membrane–Cortical Granule Complex of *Xenopus laevis* Oocytes *George Pei Herng Young, Samuel S. Koide, and John Ding-E Young* 1025

Oxidation-Induced Increase in Activity of Angiotensin Converting Enzyme in the Rat Kidney *Fumihiko Ikemoto, Gyeong-Bu Song, Munechika Tominaga, and Kenjiro Yamamoto* 1032

Liposome Targeting to Mouse Brain: Mannose as a Recognition Marker *F. Umezawa and Y. Eto* 1038

Production of B Cell Stimulatory Factory-2/Interleukin 6 Activity by Human Endothelial Cells *Kenichi Norioka, Masako Hara, Masayoshi Harigai, Atsushi Kitani, Tatsuo Hirose, Kimihiro Suzuki, Makoto Kawakami, Hirotsugu Tabata, Mitsuhiro Kawagoe, and Haruo Nakamura* 1045

Characterization of mRNA and Genes for Aldose Reductase in Rat *Chihiro Nishimura, Caroline Graham, Thomas C. Hohman, Masao Nagata, W. Gerald Robison, Jr., and Deborah Carper* 1051

Nonenzymatic Glycation of Apolipoprotein A-I: Effects on Its Self-Association and Lipid Binding Properties
Carlos Calvo, Corinne Talussot, Gabriel Ponsin, and François Berthézène 1060

A Novel Human Plasma Factor(s) Capable of Mobilizing Intracellular Ca^{2+} in Cultured Rat Vascular Smooth Muscle Cells
Hiroki Yoshimi, Yukio Hirata, Shoichiro Takata, Yasuyuki Takagi, Yuka Fukuda, Morio Kuramochi, and Teruo Omae 1068

Insulin-like Growth Factors Stimulate Chemotaxis in Human Melanoma Cells
Mary L. Stracke, Elise C. Kohn, Sadie A. Aznavoorian, Lori L. Wilson, David Salomon, Henry C. Krutzsch, Lance A. Liotta, and Elliott Schiffmann 1076

Free and Bound Forms of Atrial Natriuretic Peptide (ANP) in Rat Plasma: Preferential Increase of Free ANP in Spontaneously Hypertensive Rats (SHR) and Stroke-Prone SHR (SHRSP)
Johji Kato, Osamu Kida, Toshihiro Kita, Shigeru Nakamura, Akira Sasaki, Kenji Kodama, and Kenjiro Tanaka 1084

High Level of c-*fos* mRNA Accumulation Is Not Obligatory for Renewed Cell Proliferation
Didier Montarras, Christian Pinset, Catherine Dubois, Janet Chenevert, and François Gros 1090

[^{3}H]Phosphatidic Acid Formed in Response to FMLP Is Not Inhibited by R59 022, a Diacylglycerol Kinase Inhibitor
Vhundi G. Mahadevappa 1097

Protein Analysis of NCA-50 Shows Identity to NCA cDNA Deduced Sequences and Indicates Post-translational Modifications
F. Grunert, F. Kolbinger, K. Schwarz, H. Schwaibold, and S. von Kleist 1105

7-Ketocholesterol Inhibits VLDL Secretion by Cultured Human and Rabbit Hepatocytes
Vladimir A. Kosykh, Eugene A. Podres, Andrei B. Sudarickov, Yuliya V. Berestetskaya, Andrei P. Surguchov, Vadim S. Repin, and Vladimir N. Smirnov 1116

A Novel Growth Factor in Rat Spleen Which Promotes Proliferation of Hepatocytes in Primary Culture
Tohru Suzuki, Nobumitsu Koga, Toru Imamura, and Youji Mitsui 1123

Effect of Tumor Promoting Phorbol Ester TPA on Epidermal Protein Synthesis: Stimulation of an Elongation Factor 2 Phosphatase Activity by TPA *in Vivo*
M. Gschwendt, W. Kittstein, and F. Marks 1129

Histamine-Stimulated Synaptosomal Ca^{2+} Uptake through Activation of Calcium Channels
Ricardo Rodriguez, Alfonso Toledo, Regina Brandner, Josefa Sabrià, José Rodriguez, and Isaac Blanco 1136

Comparison of Patterns of Expression of Tumour Necrosis Factor, Lymphotoxin, and Interleukin 6 mRNA
Martin Turner and Marc Feldmann 1144

α-Cl-α-Br-Phosphonoacetic Acid Is a Potent and Selective Inhibitor of Na^+/Pi Cotransport across Renal Cortical Brush Border Membrane
Anzelm Hoppe, Charles E. McKenna, Vahak Harutunian, Jeffrey N. Levy, and Thomas P. Dousa 1152

The Human Gene for von Willebrand Factor: Identification of Repetitive Alu Sequences 5′ to the Transcription Initiation Site
Zahra Assouline, Danièle M. Kerbiriou-Nabias, Geneviève Piétu, Nadine Thomas, Bruce R. Bahnak, and Dominique Meyer 1159

The Production of Anorexigenic Substances by Intestinal Flora
T. Ohkubo, Tomi Tsuda, S. Sawamura, T. Katsunuma, and M. Yamamura 1167

The Gene Coding a Ubiquitin-Activating Enzyme May Locate on X Chromosome
Motoaki Ohtsubo and Takeharu Nishimoto 1173

Polyamines Are Intracellular Messengers in the β-Adrenergic Regulation of Ca^{2+} Fluxes, $[Ca^{2+}]_i$, and Membrane Transport in Rat Heart Myocytes
Harold Koenig, Alfred D. Goldstone, and Chung Y. Lu 1179

Melatonin in the Lacrimal Gland: First Demonstration and Experimental Manipulation
Molina C. Mhatre, Albert S. van Jaarsveld, and Russel J. Reiter 1186

Characterization of a Proteolytic Enzyme in the Skin Secretions of *Xenopus laevis*
Nigel J. Darby and Derek G. Smyth 1193

Synthesis of a New Cell Penetrating Calpain Inhibitor (Calpeptin)
Toshimasa Tsujinaka, Yuki Kajiwara, Junichi Kambayashi, Masato Sakon, Naoki Higuchi, Takaharu Tanaka, and Takesada Mori 1201

Role of Sulphated Tyrosine Residue in Influencing the Biologic Activity of Human Cholecystokinin-33 *Ryuichiro Doi, Kazutomo Inoue, Masafumi Kogire, Shoichiro Sumi, Mitsutoshi Yun, Shiroh Futaki, Nobutaka Fujii, Haruaki Yajima, and Takayoshi Tobe* 1209

GTP-Binding Proteins and Adenylate Cyclase Activity in v-Ki-*ras* Transformed NIH/3T3 Fibroblast Cells *Lisa Konishi-Imamura, Michihisa Tohda, Makoto Noda, Hirofumi Nakano, and Yasuyuki Nomura* 1214

Recombinant Human Tumor Necrosis Factor α Lacks Chemotactic Activity for Human Peripheral Blood Neutrophils and Monocytes *Ulrich Mrowietz, Jens-M. Schröder, and Enno Christophers* 1223

Differential Processing of Corticotrophin-Releasing Hormone by the Human Placenta and Hypothalamus *E.-C. Chan, M. Thomson, G. Madsen, J. Falconer, and R. Smith* 1229

Characterization of Multiple Fumarase Proteins in *Escherichia coli*
Noboru Yumoto and Masanobu Tokushige 1236

Site-Directed Mutagenesis of the cAMP-Binding Sites of the Recombinant Type I Regulatory Subunit of cAMP-Dependent Protein Kinase
Takayoshi Kuno, Hisato Shuntoh, Motoyoshi Sakaue, Kiyofumi Saijoh, Takehiko Takeda, Kanji Fukuda, and Chikako Tanaka 1244

L-Arginine Is the Physiological Precursor for the Formation of Nitric Oxide in Endothelium-Dependent Relaxation
Richard M. J. Palmer, Daryl D. Rees, David S. Ashton, and Salvador Moncada 1251

Presence of a Lipophosphoglycan in Two Variants of *Trypanosoma brucei brucei*
Marylène Hublart, Daniel Tetaert, Lucia Mendonca-Previato and Pierre Degand 1257

Inhibition of Phospholipase A2 Activity of Guinea Pig Alveolar Macrophages by Lipocortin-like Proteins Purified from Mice Lung
Mourad Errasfa, Maria Bachelet, and Françoise Russo-Marie 1267

Rapid Purification of Two Lipocortin-like Proteins from Mice Lung
Mourad Errasfa and Françoise Russo-Marie 1271

Interferon-γ Activates the Voltage-Gated Calcium Channel in RPMI 4788 Cells
Hiromi Iwagaki, Sadanori Fuchimoto, Mikio Miyake, Hiroyuki Aoki, and Kunzo Orita 1276

Exposure to Depolarizing Concentrations of K^+ Inhibits Hormonally - Induced Calcium Influx in Rat Liver *Joseph G. Altin, Trevor J. Biden, Ari Karjalainen, and Fyfe L. Bygrave* 1282

Expression of Proto-*ret* mRNA in Embryonic and Adult Rat Tissues
Tomoko Tahira, Yukihito Ishizaka, Takashi Sugimura, and Minako Nagao 1290

Calculation of the Magnitude and Orientation of Electrostatic Interactions between Small Aromatic Rings in Peptides and Proteins: Implications for Angiotensin II
Patrick W. Fowler and Graham J. Moore 1296

Sequence Analysis of Mouse Tyrosinase cDNA and the Effect of Melanotropin on Its Gene Expression *Byoung S. Kwon, Mark Wakulchik, Asifa K. Haq, Ruth Halaban, and Daniel Kestler* 1301

The Radiation Inactivation Method Provides Evidence That Membrane-Bound Mitochondrial Creatine Kinase Is an Oligomer
Eric Quemeneur, Denise Eichenberger, Denise Goldschmidt, Christian Vial, Guy Beauregard, and Michel Potier 1310

Increase of $(Ca^{2+}+Mg^{2+})$-ATPase Activity of Renal Basolateral Membranes by Platelet-Derived Growth Factor through a Specific Receptor
Kazuyuki Itoh, Shigeto Morimoto, Tsunehito Shiraishi, Kazuhisa Taniguchi, Toshio Onishi, and Yuichi Kumahara 1315

DNA Polymerase α Activity in Mitogen-Activated Lymphocytes
Jan Stec and David Busbee 1324

ERRATUM
Volume 152, Number 3, May 16, 1988: K. C. Chan, J. Ranwani, and M. A. Moscarello, "Myelin Basic Protein Binds GTP at a Single Site in the N-Terminus," pp. 1468–1473 1333

Author Index for Volume 153 1334

Volume 154, Number 1, July 15, 1988

AUTHOR INDEX, Volume 154, Number 1, July 15, 1988 iii

Inhibition of Rapid Ca-Release from Isolated Skeletal and Cardiac Sarcoplasmic Reticulum (SR) Membranes *Michele Chiesi, Roland Schwaller, and Gabriella Calviello* 1

Evidence That Type II Insulin-like Growth Factor Receptor Is Coupled to Calcium Gating System *Itaru Kojima, Ikuo Nishimoto, Taroh Iiri, Etsuro Ogata, and Ron Rosenfeld* 9

Activation of Protein Kinase C by *cis*- and *trans*-Fatty Acids and Its Potentiation by Diacylglycerol *Roland Seifert, Christoph Schächtele, Walter Rosenthal, and Günter Schultz* 20

Inhibition of African Swine Fever Virus DNA Synthesis by (*S*)-9-(3-Hydroxy-2-Phosphonylmethoxypropyl) Adenine *O. Arzuza, D. García-Villalón, E. Tabarés, C. Gil-Fernández, and E. De Clercq* 27

Identification of L-Pipecolate Oxidase in Human Liver and Its Deficiency in the Zellweger Syndrome *R. J. A. Wanders, G. J. Romeyn, C. W. T. van Roermund, R. B. H. Schutgens, H. van den Bosch, and J. M. Tager* 33

Defective Human Erythrocyte Uroporphyrinogen Decarboxylase in Familial Porphyria Cutanea Tarda: The Metabolic Lesion or the Result of Endogenous Porphyrinemia? *S. K. Mukerji and N. R. Pimstone* 39

A Comparison of the Effect of Experimental General Anesthetics on Nerve Impulse Blockade and on a Proteinaceous Target Site *Jaime Requena, Oscar Morán, and Pedro Malavé* 47

Cell-Cycle-Dependent Transformation Competence in *Dictyostelium discoideum* *Wolfgang Nellen and Uschi Saur* 54

Intracellular Redistribution of SCP_2 in Leydig Cells after Hormonal Stimulation May Contribute to Increased Pregnenolone Production *Marjolein van Noort, Focko F. G. Rommerts, Aart van Amerongen, and Karel W. A. Wirtz* 60

Domains in Bovine Serum Amine Oxidase *Anna Giartosio, Enzo Agostinelli, and Bruno Mondoví* 66

Apolipoprotein C-II Deficiency: Identification of a Structural Variant $ApoC\text{-}II_{Padova}$ *Silvia S. Fojo, Giovanella Baggio, Carlo Gabelli, Kayoko Higuchi, Marina Bojanovski, Richard E. Gregg, and H. Bryan Brewer, Jr.* 73

Co-localization of LHβ and FSHβ mRNAs in the Porcine Anterior Pituitary by *in Situ* Hybridization with Biotinylated Probes *Y. C. Liu, Y. Kato, K. Inoue, S. Tanaka, and K. Kurosumi* 80

Giant Proteoliposomes Prepared by Freezing–Thawing without Use of Detergent: Reconstitution of Biomembranes Usually Inaccessible to Patch–Clamp Pipet Microelectrode *Yoshiro Saito, Naohide Hirashima, and Yutaka Kirino* 85

Isolation of Putative Promoter Region for Human Terminal Deoxynucleotidyltransferase Gene *Osamu Koiwai and Akimichi Morita* 91

Paradoxical Effects of Amiloride Analogs on Protein Phosphorylation and Serotonin Release Induced by Agonists in Human Platelets *Ken-ichi Yoshida, Ryoji Matoba, Edward J. Cragoe, Jr., and Vivianne T. Nachmias* 101

ATP-Dependent Cl^- Uptake by Plasma Membrane Vesicles from the Rat Brain *Chiyoko Inagaki and Tsutomu Shiroya* 108

Inorganic Pyrophosphate: Fructose-6-phosphate 1-Phosphotransferase of the Potato Tuber Is Related to the Major ATP-Dependent Phosphofructokinase of *Escherichia coli* *Xiao-Hua Yuan, Danuta Kwiatkowska, and Robert G. Kemp* 113

Binding of Deoxyadenylate and Deoxycytidylate Antibodies to Double-Stranded DNA *Y. N. Vaishnav and A. Antony* 118

Effects of 3′-Azido-3′-deoxythymidine on the Deoxynucleotide Triphosphate Pools of Cultured Human Cells *Lloyd W. Frick, Donald J. Nelson, Marty H. St. Clair, Phillip A. Furman, and Thomas A. Krenitsky* 124

The Human Pregnancy-Specific β_1-Glycoprotein (PSβG) and the Carcinoembryonic Antigen (CEA)-Related Proteins Are Members of the Same Multigene Family *C. Streydio, K. Lacka, S. Swillens, and G. Vassart* 130

Distribution of Receptors for Insulin and Insulin-like Growth Factor I (Somatomedin C) in the Adrenal Gland *Dennis J. Pillion, Maria Yang, and William E. Grizzle* 138

Human Parathyroid Hormone Related Protein Fragment-(1-34) Had Glucose-6-phosphate Dehydrogenase Activity on Distal Convoluted Tubules in Cytochemical Bioassay *Masamichi Nakai, Masaaki Fukase, Kazushige Sakaguchi, Toshiharu Noda, Nobutaka Fujii, and Takuo Fujita* 146

Hormonal Regulation of Rat Leydig Cell Cytochrome $P\text{-}450_{17\alpha}$ mRNA Levels and Characterization of a Partial Length Rat $P\text{-}450_{17\alpha}$ cDNA *Marie Nishihara, Christine A. Winters, Ellen Buzko, Michael R. Waterman, and Maria L. Dufau* 151

2D NMR Analysis of Group B Capsular Polysaccharide of *Neisseria meningitidis:* Complete Assignment of ^1H NMR Spectrum of B Polysaccharide of Strain 6275 *Ryohei Yamasaki* 159

Purification of a High Specific Activity Methane Monooxygenase Hydroxylase Component from a Type II Methanotroph *Brian G. Fox and John D. Lipscomb* 165

Evidence That Phorbol Ester-Activated Pathways Are Not Directly Involved in the Action of Insulin in Rat Adipocytes *Per Heden Andersen, Bjørn Richelsen, and Henning Juhl* 171

Heat Shock Inhibits NADPH Oxidase in Human Neutrophils *Isabelle Maridonneau-Parini, Josiane Clerc, and Barbara S. Polla* 179

The Role of Protein Kinase C Activation in Signal Transmission by Interleukin 2 *Naofumi Mukaida, Hitoshi Yagisawa, Tadashi Kawai, and Tadashi Kasahara* 187

Reconstitution of Cardiac Gap Junction Channeling Activity into Liposomes: A Functional Assay for Gap Junctions *Dale E. Claassen and Brian S. Spooner* 194

A Possible Recognition Mode of mRNA Cap Terminal Structure by Peptide: Cooperative Stacking and Hydrogen-Bond Pairing Interactions between m7GpppA and Trp–Leu–Glu *Hitoshi Ueda, Mitsunobu Doi, Masatoshi Inoue, Toshimasa Ishida, Toshiki Tanaka, and Seiichi Uesugi* 199

Inhibition of Production of Macrophage-Derived Angiogenic Activity by the Antirheumatic Agents Gold Sodium Thiomalate and Auranofin *Alisa E. Koch, Michael Cho, Jim Burrows, S. Joseph Leibovich, and Peter J. Polverini* 205

Properties of Vasopressin-Activated Human Platelet High Affinity GTPase *Daniel Vittet, Bernard Cantau, Marie-Noëlle Mathieu, and Claude Chevillard* 213

Time- and Use-Dependent Inhibition by Ryanodine of Caffeine-Induced Contraction of Guinea Pig Aortic Smooth Muscle *Shitomi Aoki and Katsuaki Ito* 219

Inhibition of Mitogen-Stimulated T Lymphocyte Proliferation by Calcitonin Gene-Related Peptide *Yukio Umeda, Mari Takamiya, Hiroyuki Yoshizaki, and Mikio Arisawa* 227

Quantitative and Kinetic Characterization of Nitric Oxide and EDRF Released from Cultured Endothelial Cells *Malte Kelm, Martin Feelisch, Rolf Spahr, Hans-Michael Piper, Eike Noack, and Jürgen Schrader* 236

Stimulation of Heart Sarcolemmal Na^+-Ca^{2+} Exchange by Concanavalin A
Naoki Makino, Dayuan Zhao, and Naranjan S. Dhalla 245

Poly(rA) Binding of α-Anomeric and β-Anomeric Tetrathymidylates Covalently Linked to an Intercalating Oxazolopyridocarbazolium: Determination of the Binding Parameters *Claudie Gautier, Didier Bazile, and Jacques Paoletti* 252

Effect of GP IIb–IIIa Complex Ligands on Calcium Ion Movement and Cytoskeleton Organization in Activated Platelets *Fabiola Sinigaglia, Antonella Bisio, Mauro Torti, Carlo L. Balduini, Giampiera Bertolino, and Cesare Balduini* 258

Physical Linkage of a Variable Region Segment and the Joining Region Segment of the Human Immunoglobulin Heavy Chain Locus *Takayuki Sato, Fumihiko Matsuda, Kwang Ho Lee, Euy Kyun Shin, and Tasuku Honjo* 265

Protein Kinase C Activity and Reactivity to Phorbol Ester in Vascular Smooth Muscle from Spontaneously Hypertensive Rats (SHR) and Normotensive Wistar Kyoto Rats (WKY) *Paul J. Silver, Rhonda E. Lepore, Wayne R. Cumiskey, Doriann Kiefer, and Alex L. Harris* 272

Effects of Growth and Differentiation Inducing Factors on Protein Kinase C of Cultured Intestinal Crypt Cells *B. Surendra Baliga and Stephen M. Borowitz* 278

Detection of Two Heme Oxygenase Isoforms in the Human Testis
G. Michael Trakshel and Mahin D. Maines 285

The Impaired Expression of Glycine Decarboxylase in Patients with Hyperglycinemias
Akihiro Kume, Shigeo Kure, Keiya Tada, and Koichi Hiraga 292

Evidence for Distinct Sites Coupled to High Affinity ω-Conotoxin Receptors in Rat Brain Synaptic Plasma Membrane Vesicles *Pamela Feigenbaum, Maria L. Garcia, and Gregory J. Kaczorowski* 298

Protein Kinase C Increases the Activity of the Polyoma Virus Middle T Antigen-Associated Phosphatidylinositol Kinase *L. Raptis, J. Bell, and J. F. Whitfield* 306

High Affinity Binding Sites for Epidermal Growth Factor (EGF) in Renal Membranes
Elizabeth Sack and Zvi Talor 312

Nucleotide Sequence Predicts Circularity and Self-cleavage of 300-Ribonucleotide Satellite of Arabis Mosaic Virus *J. M. Kaper, M. E. Tousignant, and G. Steger* 318

Characterization of Insulin-like Growth Factor I (IGF-I) Receptors of Human Breast Cancer Cells *M. N. Pollak, C. Polychronakos, S. Yousefi, and M. Richard* 326

Vasodilatory Properties of Mono-L-arginine-Containing Compounds
George Thomas and Peter W. Ramwell 332

Changes of C-*mos* Expression in Response to 2-*O*-Tetradecanoylphorbol-13-acetate in Undifferentiated Teratocarcinoma Cells *Yuko Ogiso, Kouichiro Kitagawa, Hoyoku Nishino, and Akio Iwashima* 339

Dual Duplication of Neurohypophysial Hormones in an Australian Marsupial: Mesotocin, Oxytocin, Lysine Vasopressin, and Arginine Vasopressin in a Single Gland of the Northern Bandicoot (*Isoodon macrourus*)
Yves Rouillé, Marie-Thérèse Chauvet, Jacqueline Chauvet, and Roger Acher 346

GTPγ *S*-Stimulated Hydrolysis of Phosphatidyinositol-4,5-bisphosphate by Soluble Phospholipase C from Human Platelets Requires Soluble GTP-Binding Protein
Joseph J. Baldassare, Michael A. Knipp, Patricia A. Henderson, and Gary J. Fisher 351

Partial Amino Acid Sequence of Rat Topoisomerase I: Comparison with the Predicted Sequences for the Human and Yeast Enzymes
Egon Durban, Massimo Bramucci, and Richard Cook 358

Chlorate: A Reversible Inhibitor of Proteoglycan Sulfation
Donald E. Humphries and Jeremiah E. Silbert 365

Structural Analysis of Recombinant Soluble Human Interleukin-2 Receptor. Primary Structure, Assignment of Disulfide Bonds, and Core IL-2 Binding Structure
May C. Miedel, Jeffrey D. Hulmes, David V. Weber, Pascal Bailon, and Yu-Ching E. Pan 372

Fura-2 Used as a Probe to Show Elevated Intracellular Free Calcium in Platelets of Dahl-Sensitive Rats Fed a High Salt Diet *Sudesh Vasdev, Peter Thompson, Chris Triggle, Peter Fernandez, Peter Bolli, and V. S. Ananthanarayanan* 380

Red Blood Cell Membrane Microviscosity Correlates with Post-transfusion Survival *Larry R. McLean, Carolyn Grote, Edward B. Silberstein, and Manley McGill* 387

Compartmentalization of Catalases in *Escherichia coli* *A. Heimberger and A. Eisenstark* 392

Biphasic Activation of Cytosolic Free Calcium and LH Responses by Gonadotropin-Releasing Hormone *Keiichi Tasaka, Stanko S. Stojilkovic, Shun-Ichiro Izumi, and Kevin J. Catt* 398

α-Sarcin Cleaves Ribosomal RNA at the α-Sarcin Site in the Absence of Ribosomal Proteins *Stephen P. Miller and James W. Bodley* 404

Atriopeptin III Depresses the Excitability of Sympathetic Neurones *Donald W. Cheung* 411

Inhibitory Effect of Somatostatin on the Basal and TSH-Stimulated [3H]-Thymidine Incorporation into Rat Thyroid Lobes Incubated *in Vitro* *Gabriela Żerek-Mełeń and Andrzej Lewiński* 417

Inhibition of Cartilage Proteoglycan Synthesis by Interleukin 1 *Hilary P. Benton and Jenny A. Tyler* 421

A Platelet-Activating Factor Antagonist Inhibits Interleukin 1-Induced Inflammation *Richard M. Rubin and James T. Rosenbaum* 429

Large Olfactory Responses of the Carp after Complete Removal of Olfactory Cilia *Makoto Kashiwayanagi, Takayuki Shoji, and Kenzo Kurihara* 437

Comparative Effects of Insulin and Proinsulin *in Vitro* on Pathways of Glucose Utilization and Lipid Synthesis in the Lactating Rat Mammary Gland *Salah Ahmed, Milena Sochor, Ikhlas Tabidi, and Patricia McLean* 443

Insulin Effect on [^{14}C]Valine Incorporation and Its Relation to Hexokinase Activity in Developing Brain *Nandita Pal and Samuel P. Bessman* 450

Structural Analysis of the Calcium Channel by Photoaffinity Labeling and Limited Proteolysis *Dave F. Johnson, Tuan H. Kuo, Filiberto Giacomelli, and Joseph Wiener* 455

Caffeine Interaction with the Ca-Release Channels of Heavy Sarcoplasmic Reticulum: Evidence That 170 kDa Ca-Binding Protein Is a Caffeine Receptor of the Ca-Channels *Alexander M. Rubtsov and Alexander J. Murphy* 462

Mitochondrial Creatine Phosphokinase Deficiency in Diabetic Rat Heart *Fatemeh Savabi* 469

A Mass Spectrometric Study of the Structure of Sterol Carrier Protein SCP_2 from Rat Liver *Howard R. Morris, Barbara S. Larsen, and Jeffrey T. Billheimer* 476

Novobiocin Inhibits the SV40 Enhancer Activity *Kimitoshi Kohno, Yukihide Iwamoto, George R. Martin, and Yoshihiko Yamada* 483

Volume 154, Number 2, July 29, 1988

AUTHOR INDEX, Volume 154, Number 2, July 29, 1988 iii

Identification and Characterization of a Cytosolic 30-kDa Histamine Stimulated Phosphoprotein in Parietal Cell Cytosol *Margret Oddsdottir, James R. Goldenring, Thomas E. Adrian, Michael J. Zdon, Karl A. Zucker, and Irvin M. Modlin* 489

Shope Fibroma Virus Growth Factor Exhibits Epidermal Growth Factor Activities in Newborn Mice *Yuang-kang Ye, Yao-Zhong Lin, and James P. Tam* 497

Phosphatidylinositol-Specific Phospholipase D: A Pathway for Generation of a Second Messenger *Jesús Balsinde, Emilio Diez, and Faustino Mollinedo* 502

Increase in Junctional Conductance Caused by Isoproterenol in Heart Cell Pairs Is Suppressed by cAMP-Dependent Protein-Kinase Inhibitor *Walmor C. De Mello* 509

Evidence for the Bioactive Conformation in a Cyclic Hexapeptide Analog of Somatostatin Containing a *cis*-Peptide Bond Mimic *M. Elseviers, L. Van Der Auwera, H. Pepermans, D. Tourwé, and G. Van Binst* 515

Significant Interaction between Low-Spin Iron(III) Site and Pyrroloquinoline Quinone in Active Center of Nitrile Hydratase *Yukio Sugiura, June Kuwahara, Toru Nagasawa, and Hideaki Yamada* 522

Asynchronous Dual Lactation in a Marsupial, the Tammar Wallaby *(Macropus eugenii)* *Kevin R. Nicholas* 529

Purification and Properties of 4-Hydroxyphenylacetic Acid 3-Hydroxylase from *Pseudomonas putida* *Satyanarayana G. Raju, Ajith V. Kamath, and C. S. Vaidyanathan* 537

Ketones As Electrophilic Substrates of Lipoxygenase *Jeffrey S. Wiseman and James S. Nichols* 544

An Analysis in Human Lymphomas of a J_α Region Involved in a c-*myc*/J_α Translocation: Relationship with TCR α, β, and γ Rearrangements *Anna Villa, Maria Grazia Sacco, Gaetano Cairo, Ida Biunno, Danièle Mathieu-Mahul, Jacques Larsen, and Paolo Vezzoni* 550

Effects of Azadirachtin on Insect Cytochrome *P*-450-Dependent Ecdysone 20-Monooxygenase Activity *Stan L. Smith and Martin J. Mitchell* 559

Identification of a 15-kDa Actin Binding Region on Gizzard Caldesmon Probed by Chemical Crosslinking *Dominique Mornet, Etienne Audemard, and Jean Derancourt* 564

Lipoprotein Secretion by Human Monocyte Derived Macrophages *Michael Aviram* 572

Zinc Increases the Affinity of Phorbol Ester Receptor in T Lymphocytes *Péter Csermely, Márta Szamel, Klaus Resch, and János Somogyi* 578

Formation of Acetaldehyde Adducts with Ethanol-Inducible P450IIE1 *in Vivo* *U. J. Behrens, M. Hoerner, J. M. Lasker, and C. S. Lieber* 584

Effect of Calcium Channel Modulators on Isolated Endothelial Cells *Kyra R. Whitmer, Judith S. Williams-Lawson, Robert F. Highsmith, and Arnold Schwartz* 591

Periodic Acid-Induced Blastogenesis of Lymphocytes Is Independent of Phosphoinositide Turnover *Francis J. Hornicek, David H. Reese, Hilda K. Lo, Theodore I. Malinin, and George I. Malinin* 606

Purification and Characterization of a Lethal Toxin from the Venom of *Heloderma horridum horridum* *Yumiko Komori, Toshiaki Nikai, and Hisayoshi Sugihara* 613

The Potassium Channel Opener Cromakalim (BRL 34915) Activates ATP-Dependent K^+ Channels in Isolated Cardiac Myocytes *Denis Escande, Dominique Thuringer, Sylvain Leguern, and Icilio Cavero* 620

Characterization of a Cleavage Product in the Human Choriogonadotropin β-Subunit *Jean-Michel Bidart, Alain Puisieux, Frédéric Troalen, Marie-José Foglietti, Claude Bohuon, and Dominique Bellet* 626

Accumulation of Large VLDL in Cyclophosphamide Treated Rabbits: Relationship with Lipoprotein Lipase Deficiency *Anne Lespine, Nicole Dousset, Bertrand Perret, Michel de Forni, Hugues Chap, and Louis Douste-Blazy* 633

Intracellular Localization of a Leukocyte Adhesion Glycoprotein Family in the Tertiary Granules of Human Neutrophils *Pedro Lacal, Rafael Pulido, Francisco Sánchez-Madrid, Carlos Cabañas, and Faustino Mollinedo* 641

Evidence That the Amyloid Fibril Protein in Senile Systemic Amyloidosis Is Derived from Normal Prealbumin *Gibbons G. Cornwell III, Knut Sletten, Björn Johansson, and Per Westermark* 648

Bombesin Stimulates Inositol Polyphosphate Production in GH_4C_1 Pituitary Tumor Cells: Comparison with TRH *Jonathan A. Pachter, Greg J. Law, and Priscilla S. Dannies* 654

A Modified Form of Microtubule-Associated Tau Protein Is the Main Component of Paired Helical Filaments *Amelia Nieto, Isabel Correas, Esteban Montejo de Garcini, and Jesús Avila* 660

Degradation of Inositol 1,3,4,5-Tetrakisphosphates by Porcine Brain Cytosol Yields Inositol 1,3,4-Trisphosphate and Inositol 1,4,5-Trisphosphate
Dieter Höer, Ariane Kwiatkowski, Christine Seib, Walter Rosenthal, Günter Schultz, and Eckard Oberdisse 668

Evidence That Glucocorticoid Response Elements in the 5′-Noncoding Region of the Hamster β_2-Adrenergic Receptor Gene Are Obligate for Glucocorticoid Regulation of Receptor mRNA Levels *Craig C. Malbon and John R. Hadcock* 676

Short-Term Inhibition of Carnitine Palmitoyltransferase I Activity in Rat Hepatocytes Incubated with Ethanol *Manuel Guzmán and Math J. H. Geelen* 682

A Monoclonal Antibody That Inhibits Opioid Binding to Rat Brain Membranes
S. Roy, Y. X. Zhu, H. H. Loh, and N. M. Lee 688

Vitamin E Inhibits Protein Kinase C Activity *Charles W. Mahoney and Angelo Azzi* 694

DNA Repair in Lymphocytes from Humans and Rats with Chronic Iron Overload
A. Pietrangelo, A. Cossarizza, D. Monti, E. Ventura, and C. Franceschi 698

Molecular Cloning, cDNA Structure, and Deduced Amino Acid Sequence for the Hormone-Induced Regulatory Subunit (RII_β) of cAMP-Dependent Protein Kinase from Rat Ovarian Granulosa Cells *Mårten Sandberg, Finn Olav Levy, Ole Øyen, Vidar Hansson, and Tore Jahnsen* 705

Monoclonal Antibodies against HLA Class I Antigens Inhibit Human Lymphocyte Proliferation but Do Not Affect Mitogen-Dependent Second Messenger Generation
Giorgio Cavallini, Tullio Pozzan, Rita Selvatici, Roberto Baricordi, Cristina Mazzilli, and Enrico Gandini 712

A Large Conductance Cl^- Channel Revealed by Patch-Recordings in Human Fibroblasts
M. Nobile and L. J. V. Galietta 719

Pathways of Hydrogen Peroxide Generation in Guinea Pig Cerebral Cortz Mitochondria
Franco Zoccarato, Lucia Cavallini, Renzo Deana, and Adolfo Alexandre 727

β-Endorphin Modification by Transglutaminase *in vitro*: Identification by FAB/MS of Glutamine-11 and Lysine-29 as Acyl Donor and Acceptor Sites
P. Pucci, A. Malorni, G. Marino, S. Metafora, C. Esposito, and R. Porta 735

Inhibition of Lymphocyte Proliferation by Synthetic Peptides Homologous to Human Plasma Apolipoproteins B and E *Alan D. Cardin, Terry L. Bowlin, and John L. Krstenansky* 741

Differing Calcium Requirements for Regulatory Effects of ATP, ATPγS, and Adenosine on $O_2^{\cdot-}$ Responses of Human Neutrophils *Peter A. Ward, Thomas W. Cunningham, Blair A. M. Walker, and Kent J. Johnson* 746

Interaction of Cibacron Blue and Anilinonaphthalenesulfonate with Lipoproteins Provides a New Means for Simple Isolation of These Plasma Proteins
Rodolfo Amthauer, Margarita Concha, Julieta Villanueva, and Manuel Krauskopf 752

Role of Dopamine and Indolamine Derivatives in the Regulation of the Sea Urchin Adenylate Cyclase *Antonio Capasso, Patrizia Cretí, Benita De Petrocellis, Pietro P. De Prisco, and Elio Parisi* 758

Cathepsin D Inactivates Cysteine Proteinase Inhibitors Cystatins
B. Lenarčič. J. Kos, I. Dolenc, P. Lučovnik, I. Križaj, and V. Turk 765

Effects of Reactive Oxygen Metabolites on Erythropoietin Production in Renal Carcinoma Cells *Munehisa Ueno, Jesse Brookins, Barbara S. Beckman, and James W. Fisher* 773

Oxygen Activation during the Interaction between MPTP Metabolites and Synthetic Neuromelanin: An ESR–Spin Trapping, Optical, and Oxidase Electrode Study
W. Korytowski, C. C. Felix, and B. Kalyanaraman 781

Influences of 7-Alkyl Substitution on the Reversible Binding of the Proximate Carcinogen *trans*-3,4-Dihydroxy-3,4-dihydrobenz[*a*]anthracene to DNA
Shigeyuki Urano, Sharon Fetzer, Ronald G. Harvey, Kenzabu Tasaki, and Pierre R. LeBreton 789

Identification of a Novel Protein Tyrosine Kinase That Phosphorylates $pp60^{c\text{-}src}$ and Regulates Its Activity in Neonatal Rat Brain *Masato Okada and Hachiro Nakagawa* 796

Lysophosphatidylcholine Is Implicated in Thioacetamide-Induced Liver Necrosis *J. Osada, H. Aylagas, M. J. Micrò-Obradors, and E. Palacios-Alaiz* 803
Candidacidal Activity of Myeloperoxidase: Characterization of Myeloperoxidase–Yeast Complex Formation *Clifford D. Wright and Robert D. Nelson* 809
The Major Protein of Pancreatic Zymogen Granule Membranes (GP-2) Is Anchored via Covalent Bonds to Phosphatidylinositol *Denis LeBel and Marlyne Beattie* 818

Volume 154, Number 3, August 15, 1988

AUTHOR INDEX, Volume 154, Number 3, August 15, 1988 iii
2′,3′-Dideoxythymidine Permeation of the Human Erythrocyte Membrane by Nonfacilitated Diffusion *Barbara A. Domin, William B. Mahony, and Thomas P. Zimmerman* 825
ras Oncogene Mediated Induction of a 92 kDa Metalloproteinase; Strong Correlation with the Malignant Phenotype *M. Ballin, D. E. Gomez, C. C. Sinha, and U. P. Thorgeirsson* 832
Detection of Chlorophyllide in Chlorophyll-Free Plasma Membrane Preparations from *Anacystis nidulans* *Barbara Hinterstoisser, Albert Missbichler, Bernard Pineau, and Günter A. Peschek* 839
Purification and Characterization of Human Urine-Derived Digitalis-like Factor *A. Goto, K. Yamada, M. Ishii, M. Yoshioka, T. Ishiguro, C. Eguchi, and T. Sugimoto* 847
Tightly Bound 2-Azido-adenine Nucleotides at Catalytic and Noncatalytic Sites of the Rat Liver F_1 ATPase Label Adjacent Tryptic Peptides of the β Subunit *Karen J. Guerrero and Paul D. Boyer* 854
Insulin-like Growth Factors in Sheep Thyroid Cells: Action, Receptors, and Production *L. K. Bachrach, M. C. Eggo, R. L. Hintz, and G. N. Burrow* 861
Cellular Mechanism of Action by a Novel Vasoconstrictor Endothelin in Cultured Rat Vascular Smooth Muscle Cells *Y. Hirata, H. Yoshimi, S. Takata, T. X. Watanabe, S. Kumagai, K. Nakajima, and S. Sakakibara* 868
Antibody Response of Three Different Strains of Mice to αs1-Casein Analyzed by Using Proteolytic and Synthetic Peptides *Akio Ametani, Soon Mi Kim, Shuichi Kaminogawa, and Kunio Yamauchi* 876
Regulation of Cytosolic Protein-Tyrosine Kinase from Porcine Spleen by Polyamines and Negative-Charged Polysaccharides *Keiko Sakai, Kiyonao Sada, Yukie Tanaka, Tomoko Kobayashi, Shun-ichi Nakamura, and Hirohei Yamamura* 883
Isolation of Endo A cDNA from Mouse 8-Cell Stage Embryos *Masami Nozaki, Keiko Murata, Takashi Morita, and Aizo Matsushiro* 890
The Elastogenic Effect of Recombinant Transforming Growth Factor-β on Porcine Aortic Smooth Muscle Cells *Ji-min Liu and Jeffrey M. Davidson* 895
Erythropoietin Receptor of a Human Leukemic Cell Line with Erythroid Characteristics *Kiyotaka Hitomi, Kiyoshi Fujita, Ryuzo Sasaki, Hideo Chiba, Yoshiaki Okuno, Shigemoto Ichiba, Takayuki Takahashi, and Hiroo Imura* 902
Transient Increase of Cytosolic Free Calcium in Cultured Human Vascular Endothelial Cells by Platelet-Activating Factor *Masahiko Hirafuji, Kazutaka Maeyama, Takehiko Watanabe, and Yasumi Ogura* 910
Acetylated HMG1 Protein Interacts Specifically with Homologous DNA Polymerase α *in Vitro* *Evdokia A. Alexandrova and Beltcho G. Beltchev* 918
Increase in the Actin-Activated Mg^{2+}-ATPase Activity of Smooth Muscle Myosin by Increasing Myosin Concentration *Masaaki Higashihara and Mitsuo Ikebe* 928
Ca^{2+}-Dependent $NAD(P)^+$-Induced Alterations of Rat Liver and Hepatoma Mitochondrial Membrane Permeability *A. E. Vercesi, V. L. Ferraz, D. V. Macedo, and G. Fiskum* 934
Thiamine Triphosphatase from *Electrophorus* Electric Organ Is Anion-Dependent and Irreversibly Inhibited by 4,4′-Diisothiocyanostilbene-2,2′disulfonic Acid *Lucien Bettendorff, Pierre Wins, and Ernest Schoffeniels* 942
Accumulation of Phosphorus Compounds in Tissues and Cultured Skin Fibroblasts in Patients with Hypophosphatasia *Y. Eto and Y. Tada* 948

Effects of the Detergent Sucrose Monolaurate on Binding of Amphotericin B to Sterols and Its Toxicity for Cells *Ilona Gruda, Eric Gauthier, Svetlana Elberg, Janina Brajtburg, and Gerald Medoff* 954

Disappearance of Diacylglycerol Kinase Translocation in *ras*-Transformed Cells *Hiroyuki Kato, Sadaaki Kawai, and Tadaomi Takenawa* 959

γ-Linolenic Acid-Enriched Diet Alters Cutaneous Eicosanoids *Craig C. Miller and Vincent A. Ziboh* 967

Relationships between Reversion of Hydroxyurea Resistance in Hamster Cells and the Coamplification of Ribonucleotide Reductase M2 Component, Ornithine Decarboxylase, and P5-8 Genes *G. A. McClarty, P. N. Tonin, P. R. Srinivasan, and J. A. Wright* 975

Short-Term Stimulation by Insulin of Lipoprotein Lipase Secretion in Adipose Cells *Anne Pradines-Figueres, Christian Vannier, and Gérard Ailhaud* 982

Interleukin 3 Stimulation of Tyrosine Kinase Activity in FDC-P1 Cells *Douglas K. Ferris, Jami Willet-Brown, Todd Martensen, and William L. Farrar* 991

The Effect of Triiodothyronine on Rat Apolipoprotein A-I and A-IV Gene Transcription *Jim J. Apostolopoulos, Mary J. La Scala, and Geoffrey J. Howlett* 997

Norepinephrine and Epinephrine in Human Erythrocyte Plasma Membranes *Hiromi Hagiwara, Alan S. Hollister, R. Keith Carr, and Tadashi Inagami* 1003

Reconstituted U1 Small Nuclear Ribonucleoprotein Complex Restores 5′ Splice Site Cleavage Activity *Clay B. Siegall, Timothy T. Hla, and Ajit Kumar* 1010

Insulin-like Growth Factors Are Mitogens for Rat Pheochromocytoma PC12 Cells *Finn C. Nielsen and Steen Gammeltoft* 1018

Determination of Nucleotide Sequence of cDNA Coding Rat Glutathione Peroxidase and Diminished Expression of the mRNA in Selenium Deficient Rat Liver *Shinichi Yoshimura, Susumu Takekoshi, Keiichi Watanabe, and Yoshiaki Fujii-Kuriyama* 1024

Cell Surface Glycoconjugates Control the Activity of the NADH-Ascorbate Free Radical Reductase of Rat Liver Plasma Membrane *P. Navas, A. Estévez, M. I. Burón, J. M. Villalba, and F. L. Crane* 1029

Decrease in the Level of Poly(ADP-ribose) Synthetase during Nerve Growth Factor-Promoted Neurite Outgrowth in Rat Pheochromocytoma PC12 Cells *Taketoshi Taniguchi, Keiko Morisawa, Masaharu Ogawa, Hiroshi Yamamoto, and Shigeyoshi Fujimoto* 1034

A Possible Role for Altered Poly(adenosine diphosphoribose)-Synthesis in the Sensitivity of Human Head and Neck Squamous Carcinoma Cells to Ionizing Radiation *Karsten Wassermann, Robert A. Newman, Jerry D. McLaughlin, Peter G. Sacks, and Leonard A. Zwelling* 1041

Identification of the Junction between the Glutamine Amidotransferase and Carbamyl Phosphate Synthetase Domains of the Mammalian CAD Protein *Julie A. Maley and Jeffrey N. Davidson* 1047

Multiple Chick Tropoelastin mRNAs *Valerie J. Baule and Judith Ann Foster* 1054

Detection of Hypermethylation of the c-abl Genomic Locus in the Spleen of Juvenile LE Rats *Koichiro Mihara, Sakan Maeda, Rei Takahashi, Masakazu Hatanaka, and Taketoshi Sugiyama* 1061

Calcium Efflux through Cardiac Calcium Channels Reconstituted into Liposomes—Flux Measurement with FURA-2 *Asako Kameyama and Takashi Nakayama* 1067

Retinol Induces Platelet Aggregation via Activation of Phospholipase A_2 *Tohru Nakano, Kohji Hanasaki, Saichi Matsumoto, and Hitoshi Arita* 1075

Insulin-Mediated Post-transcriptional Regulation of Hepatic Malic Enzyme and Albumin mRNAs *Betty B. Davis, Subu Magge, Cathleen G. Mucenski, and Richard L. Drake* 1081

Dibutyryl Cyclic AMP Decreases Expression of ED-A Fibronectin by Canine Chondrocytes *Nancy Burton-Wurster, Harry R. Leipold, and George Lust* 1088

Change in Binding Affinities of 3Y1 Secreted Fibronectin upon Desulfation of Tyrosine-O-Sulfate *Masahito Suiko and Ming-Cheh Liu* 1094
The Large Neurofilament Subunit (NF-H) of the Rat: cDNA Cloning and *in Situ* Detection *A. Dautigny, D. Pham-Dinh, G. Roussel, J. M. Felix, J. L. Nussbaum, and P. Jollès* 1099
Isolation and Characterization of Three Protein Proteinase Isoinhibitors from the Granular Fraction of Horse Neutrophilic Granulocytes *Antonio Pellegrini, Gabrielle Hägeli, and Roland von Fellenberg* 1107
Hydroxylation, Conjugation, and Sulfation of Bile Acids in Primary Monolayer Cultures of Rat Hepatocytes *Hans M. G. Princen and Piet Meijer* 1114
Conversion of Angiotensin I to Angiotensin II by Cathepsin A Isoenzymes of Porcine Kidney *James J. Miller, David G. Changaris, and Robert S. Levy* 1122
Toward a Biomarker of Mammalian Senescence: Carbonic Anhydrase III *Hartmut Wohlrab, Roderick T. Bronson, Renne C. Lu, and Valeria Nemeth* 1130
Muscarinic Receptor-Mediated Increase in cAMP Levels in SK-N-SH Human Neuroblastoma Cells *Jesse Baumgold and Peter H. Fishman* 1137
Molecular Weight and Shape of Angiotensin-I Converting Enzyme. A Neutron Scattering Study *B. Baudin, P. A. Timmins, L. Drouet, Y. Legrand, and F. Ch. Baumann* 1144
Increased Adenylate Cyclase Catalytic Activity Explains How Estrogens *in Vivo* Promote Lipolytic Activity in Rat White Fat Cells *Yves-Noël Pasquier, René Pecquery, and Yves Giudicelli* 1151
Effect of Dexamethasone on Kininogen Production by a Rat Hepatoma Cell Line *Thierry Baussant, Annie Michaud, Jacob Bouhnik, Françoise Savoie, François Alhenc-Gelas, and Pierre Corvol* 1160
In Vitro Translation and Processing of Human Hepatoma Cell (Hep G2) γ-Glutamyl Transpeptidase *Suresh S. Tate and Richard A. Galbraith* 1167
Detection of Cellular Retinol-Binding Protein Messenger RNA in the Somatic Cells of the Rat Seminiferous Tubules *M. Galdieri, R. Faraonio, and V. Colantuoni* 1174
Expression of Parathyroid Hormone-Related Protein in a Human T Cell Lymphotrophic Virus Type I-Infected T Cell Line *Toru Motokura, Seiji Fukumoto, Shunji Takahashi, Toshiko Watanabe, Toshio Matsumoto, Tetsuya Igarashi, and Etsuro Ogata* 1182
A Simple, Sensitive Bioassay for the Detection of Interleukin-1 Using Human Melanoma A375 Cell Line *Satoru Nakai, Keiko Mizuno, Mayumi Kaneta, and Yoshikatsu Hirai* 1189
The Carbohydrate Moiety of the Activator Protein for Glucosylceramide β-Glucosidase *Akira Sano and Norman S. Radin* 1197
Cloning of a Rabbit Brain Glucose Transporter cDNA and Alteration of Glucose Transporter mRNA during Tissue Development *Tomoichiro Asano, Yoshikazu Shibasaki, Masato Kasuga, Yasunori Kanazawa, Fumimaro Takaku, Yasuo Akanuma, and Yoshitomo Oka* 1204
Isolation of an Activator of Bilirubin Glucuronyltransferase from Normal and Jaundiced Gunn Rats *Gerard B. Odell, William S. Mogilevsky, and Frank L. Siegel* 1212
Evidence for a FSH-Dependent Secretion of a Receptor Reactive Transforming Growth Factor β-like Material by Immature Sertoli Cells in Primary Culture *M. Benahmed, C. Cochet, M. Keramidas, M. A. Chauvin, and A. M. Morera* 1222
Intracellular Localization of Platelet-Activating Factor Synthesis in Human Neutrophils *Faustino Mollinedo, Julian Gómez-Cambronero, Ernesto Cano, and Mariano Sánchez-Crespo* 1232
Maternal Inheritance of Deleted Mitochondrial DNA in a Family with Mitochondrial Myopathy *Takayuki Ozawa, Makoto Yoneda, Masashi Tanaka, Kinji Ohno, Wataru Sato, Hiroshi Suzuki, Morimitsu Nishikimi, Masahiko Yamamoto, Ikuya Nonaka, and Satoshi Horai* 1240
Formation of Leukotriene B_4-Coenzyme A Ester by Rat Liver Microsomes *Atsushi Yamaoka, Hideki Sumimoto, Ryuichi Isobe, and Shigeki Minakami* 1248
Ribonuclease A: A Complete Proton NMR Fingerprint Using TOCSY and NOESY *L. Y. Lian* 1253

Experiments in Water
Subunit III of Cytochrome C Oxidase Is Expressed in *Paracoccus denitrificans* *Michele Müller, Néstor Labonia, and Angelo Azzi* 1260
Rapid Changes in Phospholipid Metabolism in the Nuclei of Swiss 3T3 Cells Induced by Treatment of the Cells with Insulin-like Growth Factor I *Lucio Cocco, Alberto M. Martelli, R. Stewart Gilmour, Andrea Ognibene, Francesco A. Manzoli, and Robin F. Irvine* 1266
The Protein Kinase Inhibitor Staurosporine, Like Phorbol Esters, Induces the Association of Protein Kinase C with Membranes *Marlene Wolf and Marco Baggiolini* 1273
Protein Kinase C (PKC) Inhibitors Inhibit Primary (1-0) but Not Secondary (1-1) or Cloned Cytotoxic T Lymphocytes *Thomas K. Howcroft, Susan M. Tatum, Judith M. Cosgrove, and Richard R. Lindquist* 1280
Inhibition by Iodide of Iodide Binding to Proteins: The "Wolff–Chaikoff" Effect Is Caused by Inhibition of H_2O_2 Generation *Bernard Corvilain, Jacqueline Van Sande, and Jacques E. Dumont* 1287
Peptide Amidation: Evidence for Multiple Molecular Forms of the Amidating Enzyme *Alan F. Bradbury and Derek G. Smyth* 1293
Discrimination between CCK Receptors of Guinea-Pig and Rat Brain by Cyclic CCK_8 Analogs *C. Durieux, H. Pham, B. Charpentier, and B. P. Roques* 1301
Calcium Release Associated with Discharge of Specific Granule Contents from Human Neutrophils *B. Styrt, M. A. Schwartz, and M. S. Klempner* 1308
Mode of Inhibitory Action of Cholecystokinin in Amylase Release from Isolated Rat Pancreatic Acini—Inhibition of Secretory Process Post to Protein Kinase C-Calcium Ion Systems *Hiroyuki Nakanishi, Harumasa Ohyanagi, Yoshifumi Takeyama, Hirohiko Onoyama, Yoichi Saitoh, Akira Kikuchi, and Yoshimi Takai* 1314
Amino Acid Sequence of the N-Terminus and Selected Tryptic Peptides of the Active Subunit of Human Plasma Carboxypeptidase N: Comparison with Other Carboxypeptidases *Randal A. Skidgel, Carl D. Bennett, James W. Schilling, Fulong Tan, Deepthi K. Weerasinghe, and Ervin G. Erdös* 1323
The Amplified Detection of Free and Bound Methoxatin (PQQ) with Nitroblue Tetrazolium Redox Reactions: Insights into the PPQ-Locus *Mercedes A. Paz, Paul M. Gallop, B. Marina Torrelio, and Rudy Flückiger* 1330
Modulation of Interferon Gene Transcription by Positive and Negative Cellular Factors *Steven Xanthoudakis and John Hiscott* 1338
Effects of Insulin and Phorbol Esters on Diacylglycerol Generation and Synthesis and Hydrolysis of Phosphatidylcholine in BC3H-1 Myocytes *Govindan P. Nair, Mary L. Standaert, Robert J. Pollet, Denise R. Cooper, and Robert V. Farese* 1345
Author Index for Volume 154 1350

Volume 155, Number 1, August 30, 1988

AUTHOR INDEX, Volume 155, Number 1, September 15, 1988 iii
NAD-Dependent Methylenetetrahydrofolate Dehydrogenase–Methenyltetrahydrofolate Cyclohydrolase in Transformed Cells Is a Mitochondrial Enzyme *Narciso R. Mejia and Robert E. MacKenzie* 1
Regulation of Bile Acid Synthesis: Isolation and Characterization of Microsomal Phosphatases *Warren F. Diven, Joyce Sweeney, Vijay Warty, and Ajit Sanghvi* 7
Alkylation of Individual Genes in Rat Liver by the Carcinogen *N*-Nitrosodimethylamine *Jamie R. Milligan and Michael C. Archer* 14
Phosphatidylinositol-4,5-bisphosphate May Antecede Diacylglycerol as Activator of Protein Kinase C *Ved P. S. Chauhan and Hans Brockerhoff* 18
Effect of Fibroblast-Derived Differentiation Inducing Factor on the Differentiation of Human Monocytoid and Myeloid Leukemia Cell Lines *Ken Takeda, Toshiko Hosoi, Munehiro Noda, Hirofumi Arimura, and Kunio Konno* 24
Structure of the Lysosomal Sphingolipid Activator Protein 1 by Homology with Influenza Virus Neuraminidase *Michel Potier* 32

Inhibition of Human Leukocyte 5-Lipoxygenase by 15-HPETE and Related Eicosanoids
John R. Cashman, Charles Lambert, and Elliott Sigal 38

Calcium-Dependent Phosphorylation of Bovine Cardiac C-Protein by Phosphorylase Kinase *Keith K. Schlender, Thomas J. Thysseril, and Mohammed G. Hegazy* 45

Phosphorylation of Glycogen Synthase by a Bovine Thymus Protein-Tyrosine Kinase, p40
Alan M. Mahrenholz, Philip Votaw, Peter J. Roach, Anna A. DePaoli-Roach, Thomas F. Ziocheck, Marietta L. Harrison, and Robert L. Geahlen 52

A Specific Insulin Receptor and Tyrosine Kinase Activity in the Membranes of *Neurospora crassa* *Stephen E. Fawell and John Lenard* 59

Aberrant DNase I Digestion Kinetics of Nucleosomal Core Particles from Sea Urchin Sperm
David Landsman, B. Trevor Sewell, and Claus von Holt 66

α-2-Adrenergic Modulation of the Parathyroid Hormone Inhibition of Phosphate Uptake in Cultured Renal (OK) Cells *Linda Cheng, C. Tony Liang, Patricia Precht, and Bertram Sacktor* 74

Binding and Effect of Atrial Natriuretic Factor on Cyclic GMP Formation and α-MSH Secretion of Intermediate Pituitary Cells *Bernadette Lutz-Bucher, Taha Boudjada, Seymour Heisler, Georges Pelletier, and Bernard Koch* 83

Gelsolin is a Ca^{2+}-Sensitive Regulator of Actomyosin System in Platelets
Toyoshi Onji, Michiko Takagi, and Nobuhiko Shibata 91

Dimethyl Sulfoxide Maintains Human Thyroid Cells in Suspension Culture, Facilitating Synthesis and Release of Thyroid Hormone *Kanji Sato, Doo Chol Han, Minoru Ozawa, Yuko Fujii, Toshio Tsushima, and Kazuo Shizume* 100

Luminol-Dependent Photoemission from Single Neutrophil Stimulated by Phorbol Ester and Calcium Ionophore: Role of Degranulation and Myeloperoxidase
Makoto Suematsu, Chikara Oshio, Soichiro Miura, Masayuki Suzuki, Shigenari Houzawa, and Masaharu Tsuchiya 106

The Effect of Interleukin-1, Interleukin-6 and Its Interrelationship on the Synthesis of Serum Amyloid A and C-Reactive Protein in Primary Cultures of Adult Human Hepatocytes *H. J. Moshage, H. M. J. Roelofs, J. V. van Pelt, B. P. C. Hazenberg, M. A. van Leeuwen, P. C. Limburg, L. A. Aarden, and S. H. Yap* 112

Release of Immunoreactive-Neuropeptide Y by Rat Platelets *Adam K. Myers, Michel Y. Farhat, Cecilia A. Vaz, Harry R. Keiser, and Zofia Zukowska-Grojec* 118

Intracellular pH of Halobacteria Can Be Determined by the Fluorescent Dye 2′, 7′-Bis(carboxyethyl)-5(6)-carboxyfluorescein
Kazuo Tsujimoto, Marco Semadeni, Margaret Huflejt, and Lester Packer 123

Effect of 2-Hydroxy-5-nitrobenzyl Bromide on Proton Translocation by the Mitochondrial H^+-ATPase *Giancarlo Solaini, Alessandra Baracca, Giovanna Parenti Castelli, and Carlo Alfonso Rossi* 130

Ethanol Differentially Regulates G Proteins in Neural Cells
Michael E. Charness, Lisa A. Querimit, and Mark Henteleff 138

Formation and Metabolism of 5(10)-Estrene-3β,17β-diol, a Novel 19-Norandrogen Produced by Porcine Granulosa Cells from C_{19} Aromatizable Androgens
M. W. Khalil, N. Chung, P. Morley, M. A. Glasier, and D. T. Armstrong 144

Early Effects of *Escherichia coli* Endotoxin Infusion on Vasopressin-Stimulated Breakdown and Metabolism of Inositol Lipids in Rat Hepatocytes
Elena B. Rodriguez de Turco and Judy A. Spitzer 151

Oxidative Stresses Induced the Cystine Transport Activity in Human Erythrocytes
Yoshinori Ohtsuka, Takahito Kondo, and Yoshikazu Kawakami 160

Endothelin Is a Potent Secretagogue for Atrial Natriuretic Peptide in Cultured Rat Atrial Myocytes *Yuka Fukuda, Yukio Hirata, Hiroki Yoshimi, Takatsugu Kojima, Yohnosuke Kobayashi, Masashi Yanagisawa, and Tomoh Masaki* 167

The Ontogeny of the Rabbit Hepatic Glucose Transporter
K. Chundu and S. Devaskar 173

Molecular Cloning and Characterization of Novel Prostate Antigen cDNAs
P. H. J. Riegman, P. Klaassen, J. A. G. M. van der Korput, J. C. Romijn, and J. Trapman 181

Demonstration of Inositol Phosphate 5-Phosphomonoesterase Activity in Rabbit Neutrophils: Absence of a Role for Protein Kinase C
S. P. Kennedy, R. I. Sha'afi, and E. L. Becker 189

Reversal of Caldesmon Function by Anti-caldesmon Antibodies Confirms Its Role in the Calcium Regulation of Vascular Smooth Muscle Thin Filaments
S. B. Marston, C. S. Redwood, and W. Lehman 197

Aluminum Affects Phosphoinositide Hydrolysis by Phosphoinositidase C
Lee J. McDonald and Mark D. Mamrack 203

Forskolin, an Activator of Adenylate Cyclase Activity, Promotes Large Increases in *N*-Acetyltransferase Activity and Melatonin Production in the Syrian Hamster Pineal Gland Only during the Late Dark Period *Celsa Santana, Juan M. Guerrero, Russel J. Reiter, Aldo Gonzalez-Brito, and Armando Menendez-Pelaez* 209

Heparin and Concanavalin A Interaction: Isolation of Fraction with Higher Anticoagulant Activity *Marta E. Fernández de Recondo, Cecilia Legorburu, Juan Carlos Monge, and Eduardo F. Recondo* 216

Existence of Anti-thyroglobulin IgG in Healthy Subjects
Takeyuki Kohno, Yoshizo Tsunetoshi, and Eiji Ishikawa 224

The Determination of a Calcium-Dependent Binding Constant of the Bovine Prothrombin Gla Domain (Residues 1–45) to Phospholipid Vesicles
David J. Weber, Jennifer S. Pollock, Lee G. Pedersen, and Richard G. Hiskey 230

NMR Relaxation Measurements Detect Four Intermediate States of ATPase and Transport Cycle of Sarcoplasmic Reticulum Ca^{2+}-ATPase
Mary R. Klemens and Charles M. Grisham 236

The Two Terminal Oxidases of the Aerobic Respiratory Chain of *Escherichia coli* Each Yield Water and Not Peroxide as a Final Product
Kimberly Carter Minghetti and Robert B. Gennis 243

12-O-Tetradecanoylphorbol-13-acetate Activates Phosphatidylethanol and Phosphatidylglycerol Synthesis by Phospholipase D in Cell Lysates
Connie S. Tettenborn and Gerald C. Mueller 249

Host–Cell Attachment by *Trypanosoma cruzi*: Identification of an Adhesion Molecule
Maria F. Lima and Fernando Villalta 256

Botulinum Toxin D ADP-Ribosylates a 22–24 kDa Membrane Protein in Platelets and HL-60 Cells That Is Distinct from $p21^{n\text{-}ras}$
Harjit Singh Banga, Sunil K. Gupta, and Maurice B. Feinstein 263

Evidence for the Essential Histidine Residue at the Active Site of Glucose/Xylose Isomerase from *Streptomyces* *S. M. Gaikwad, M. W. More, H. G. Vartak, and V. V. Deshpande* 270

Reoxygenation Injury in Isolated Hepatocytes: Cell Death Precedes Conversion of Xanthine Dehydrogenase to Xanthine Oxidase *Herbert de Groot and Andrea Littauer* 278

Enhanced Synthesis and Secretion of Apolipoprotein E from Sciatic Nerves of Streptozotocin-Induced Diabetic Rats after Injury *Shun Ishibashi, Nobuhiro Yamada, Yoshitomo Oka, Hitoshi Shimano, Natsuko Mori, Tai Heon Yoon, Masako Shimada, Yasunori Kanazawa, Yasuo Akanuma, Toshio Murase, and Fumimaro Takaku* 283

Positive Inotropic Effects and Receptors of Calcitonin Gene-Related Peptide (CGRP) in Porcine Ventricular Muscles *T. Miyauchi, Y. Sano, O. Hiroshima, T. Yuzuriha, Y. Sugishita, T. Ishikawa, A. Saito, and K. Goto* 289

Lupus-Related Transcript Homologous to Abelson-Murine Leukemia Virus
Yasuhiro Deguchi, Shigeru Negoro, and Susumu Kishimoto 295

Molecular Cloning of a cDNA for α-Subunit of Rat Liver Electron Transfer Flavoprotein
Kyoko Shinzawa, Taisuke Inagaki, Nobuko Ohishi, Chikako Ichihara, Norihiro Tsukagoshi, Sigezo Udaka, and Kunio Yagi 300

Fibroblast-like Transformation and c-*myc* Gene Alteration of Human Hepatocytes Induced by Novobiocin and Butyrate *Yoshiyasu Kaneko, Toshifumi Nakayama, Takashi Hamasaki, Ayumi Tsukamoto, Gotaro Toda, and Hiroshi Oka* 305

Specific Binding of Platelet-Activating Factor (PAF) by Human Peripheral Blood Mononuclear Leukocytes *David S. Ng and Kenneth Wong* 311

A Single Amino Acid Substitution Converts Cytochrome $P\text{-}450_{14DM}$ to an Inactive Form, Cytochrome $P\text{-}450_{SG1}$: Complete Primary Structures Deduced from Cloned DNAs *Nobuhiro Ishida, Yuri Aoyama, Ritsuko Hatanaka, Yoshiaki Oyama, Seiichi Imajo, Masaji Ishiguro, Takehiro Oshima, Hiroshi Nakazato, Teruhisa Noguchi, Utpalendu S. Maitra, Venkitachalam P. Mohan, David B. Sprinson, and Yuzo Yoshida* 317

Inhibition of Radiation-Induced Apoptosis *in Vitro* by Tumor Promoters *L. David Tomei, Peter Kanter, and Charles E. Wenner* 324

Isolation of Angiotensin-Converting Enzyme Inhibitor from Tuna Muscle *Yasuhiro Kohama, Shigeru Matsumoto, Hiroaki Oka, Tetsuyuki Teramoto, Masaru Okabe, and Tsutomu Mimura* 332

Mutagenicity of the Nuclease Activity of 1,10-Phenanthroline–Copper Ion *Andrew L. Feig, Theodore Thederahn, and David S. Sigman* 338

Isolation and Primary Structure of a Neuropeptide Hormone from *Heliothis zea* with Hypertrehalosemic and Adipokinetic Activities *Howard Jaffe, Ashok K. Raina, Clark T. Riley, Blair A. Fraser, Thomas G. Bird, Ching-Ming Tseng, Yao-Shi Zhang, and Dora K. Hayes* 344

A New *lux* Gene in Bioluminescent Bacteria Codes for a Protein Homologous to the Bacterial Luciferase Subunits *Robert R. Soly, Joseph A. Mancini, Stefano R. Ferri, Michael Boylan, and Edward A. Meighen* 351

[Leu^{13}-ψ(CH_2NH)Leu^{14}]Bombesin Is a Specific Bombesin Receptor Antagonist in Swiss 3T3 Cells *Penella J. Woll, David H. Coy, and Enrique Rozengurt* 359

Identification of a Polypeptide Secreted by Human Breast Cancer Cells (MCF-7) as the Human Estrogen-Responsive Gene (pS2) Product *Kazutoshi Mori, Ritsuko Fujii, Noriyoshi Kida, Mitsuhiro Ohta, and Kyozo Hayashi* 366

Overproduction of Ornithine Decarboxylase Confers an Apparent Growth Advantage to Mouse Tumor Cells *Kirsi Polvinen, Riitta Sinervirta, Leena Alhonen, and Juhani Jänne* 373

Deduced Amino Acid Sequence of Mature Chicken Testis Ferredoxin *Keiko Kagimoto, John L. McCarthy, Michael R. Waterman, and Masaaki Kagimoto* 379

Elongation Factor Tu of the Extreme Thermophilic Hydrogen Oxidizing Bacterium *Calderobacterium hydrogenophilum* *Karel Mikulík, Chuang-Ling Qiao, Theodor Petřík, Margarita A. Puscheva, and Georgij A. Zavarzin* 384

Effects of Growth Hormone on Cytochrome $P\text{-}450_j$ *Marvin T. Williams and Lizette C. Simonet* 392

Rat Clusterin Isolated from Primary Sertoli Cell-Enriched Cultured Medium Is Sulfated Glycoprotein-2 (SGP-2) *C. Yan Cheng, Ching-Ling C. Chen, Zong-Ming Feng, Aileen Marshall, and C. Wayne Bardin* 398

Thiol Peroxyl Radical Formation from the Reaction of Cysteine Thiyl Radical with Molecular Oxygen: An ESR Investigation *Michael D. Sevilla, Mengyao Yan, and David Becker* 405

Purification and Characterization of Glucose (Xylose) Isomerase from *Chainia* sp. (NCL 82-5-1) *H. S. Pawar, K. Kannan, M. C. Srinivasan, and H. G. Vartak* 411

Parallel Induction of Fibrinolysis and Receptors for Plasminogen and Urokinase by Interferon-γ on U937 Cells *H. Lu, Mc. Mirshahi, P. Krief, C. Soria, J. Soria, Z. Mishal, O. Bertrand, J. Y. Perrot, H. Li, C. Picot, E. Pujade, A. Bernadou, and J. P. Caen* 418

Role of Hexokinase in the Regulation of Erythrocyte Hexose Monophosphate Pathway under Oxidative Stress *Mauro Magnani, Luigia Rossi, Marzia Bianchi, Giordano Serafini, and Vilberto Stocchi* 423

Inhibition of *in Vitro* Angiogenesis by Lymphotoxin and Interferon-γ *Nobuo Tsuruoka, Masako Sugiyama, Yasunori Tawaragi, Masafumi Tsujimoto, Tatsuro Nishihara, Tamotsu Goto, and Noboru Sato* 429

Mosquito Vitellogenin Subunits Originate from a Common Precursor
Sarojini G. Bose and Alexander S Raikhel 436

Cloned Riboprobe for Detection of a Mycoplasmalike Organism
I.-M. Lee, R. E. Davis, R. Hammond, and B. Kirkpatrick 443

Increase in the Relative Abundance of Preproenkephalin A Messenger RNA in the Ventricles of Cardiomyopathic Hamsters
Michel Ouellette and Léa Brakier-Gingras 449

A New Method for the Isolation of Fresh Hepatocytes from Periportal and Pericentral Regions of the Liver Lobule *U. K. Misra, H. Yamanaka, Z. Kizaki, F. C. Kauffman, and R. G. Thurman* 455

Chromosome 18 Allele Loss at the D18S6 Locus in Human Colorectal Carcinomas
Bruce M. Boman, David M. Wildrick, and Sharon R. Alfaro 463

Expression of Tyrosinase Gene in Amelanotic Mutant Mice
Sakae Takeuchi, Hiroaki Yamamoto, and Takuji Takeuchi 470

Reversal of Chloroquine Resistance in Falciparum Malaria Independent of Calcium Channels *Zuguang Ye and Knox Van Dyke* 476

Nerve Growth Factor (NGF) Is Present in Human Placenta and Semen, but Undetectable in Normal and Paget's Disease Blood: Measurements with an Anti-mouse-NGF Enzyme Immunoassay Using a Recombinant Human NGF Reference
Gerhard Heinrich and Terry E. Meyer 482

Cloning and Expression of the Metalloproteinase Inhibitor (S-MPI) Gene from *Streptomyces nigrescens* *Kan Tanaka, Hiuga Saito, Motoo Arai, Sawao Murao, and Hideo Takahashi* 487

Effect of Inducers on Metabolism of Benzo[a]pyrene *in Vivo* and *in Vitro*: Analysis by High-Pressure Liquid Chromatography *Debjani Datta and Timir B. Samanta* 493

Affinity Gels for Purification of Retinoid-Specific Binding Protein (RSBP)
Hiroyuki Kagechika, Yuichi Hashimoto, Emiko Kawachi, and Koichi Shudo 503

Biosynthesis of Cholesterol in the Yeast Mutant eRG6 *Sihua Xu and W. David Nes* 509

Mistranslation in IGF-1 during Overexpression of the Protein in *Escherichia coli* Using a Synthetic Gene Containing Low Frequency Codons
Ramnath Seetharam, Robert A. Heeren, Edith Y. Wong, Sarah R. Braford, Barbara K. Klein, Serdar Aykent, Claire E. Kotts, Karl J. Mathis, Bruce F. Bishop, Michael J. Jennings, Christine E. Smith, and Ned R. Siegel 518

Structure of a Novel Human Granulocyte Peptide with Anti-ACTH Activity
Ava Singh, Andrew Bateman, Qinzhang Zhu, Shunichi Shimasaki, Fred Esch, and Samuel Solomon 524

Specificity of a Nucleolar 2′-*O*-Methyltransferase for RNA Substrates
Duane C. Eichler and Susan J. Eales 530

ERRATUM
Volume 153, Number 1, May 31, 1988: Gerald E. Fronko, Robert J. Suhadolnik, Eric C. Vonderheid, Katalin Karikó, Nancy L. Reichenbach, Kenneth D. Chavin, and Earl E. Henderson, "Decreased Epstein–Barr Virus-Induced Transformation, and Elevated 2-5A Synthetase and RNase L Activity in Peripheral Blood Monuclear Cells from Patients Treated with Recombinant Interferon-α2b," pp. 448–453 538

Volume 155, Number 2, September 15, 1988

AUTHOR INDEX, Volume 155, Number 2, September 15, 1988 iii

Bovine Parathymosin: Amino Acid Sequence and Comparison with Rat Parathymosin
C. Panneerselvam, M. Clinton, D. Wellner, and B. L. Hocreker 539

Calcium-Activated Neutral Protease (CANP), a Putative Processing Enzyme of the Neuropeptide, Kyotorphin, in the Brain *Yoshihiro Yoshihara, Hiroshi Ueda, Shinobu Imajoh, Hiroshi Takagi, and Masamichi Satoh* 546

Acute-Phase Response of mRNAs for Serum Amyloid P Component, C-Reactive Protein, and Prealbumin (Transthyretin) in Mouse Liver
Tatsufumi Murakami, Shuji Ohnishi, Seiji Nishiguchi, Shuichiro Maeda, Shukuro Araki, and Kazunori Shimada 554

The Diacylglycerol Kinase Inhibitor R 59022 Potentiates Bombesin Stimulation of Protein Kinase C Activity and DNA Synthesis in Swiss 3T3 Cells
Clive Morris, Peter Rice, and Enrique Rozengurt 561

Hydrogen Peroxide Generation in Whole Rat Pancreatic Islets: Synergistic Regulation by Cytoplasmic Free Calcium and Protein Kinase C
Nobuyuki Takasu, Mitsuhisa Komatsu, Toru Aizawa, and Takashi Yamada 569

The Effect of Platelet Activating Factor on Electron Transport of Spinach Chloroplasts
Rita Barr, Marco Floreani, Janet Weiss, and Frederick L. Crane 576

Purification of Basic FGF Receptors from Rat Brain
Toru Imamura, Yoshihito Tokita, and Youji Mitsui 583

α_2-Antiplasmin's Carboxy-Terminal Lysine Residue Is a Major Site of Interaction with Plasmin *Glen L. Hortin, Beverly L. Gibson, and Kam F. Fok* 591

Chlorpromazine Inhibits Human Natural Killer Cell Activity and Antibody-Dependent Cell-Mediated Cytotoxicity *Timothy A. Steele and Zacharie Brahmi* 597

Phorbol Ester Stimulation of Fibronectin-Mediated Cell Adhesion *Patricia J. Brown* 603

Amyloid Fibrils Formed from a Segment of the Pancreatic Islet Amyloid Protein
George G. Glenner, E. David Eanes, and Clayton A. Wiley 608

Activation of Dolichol-Phosphate Mannosyltransferase by Dibutryl Cyclic AMP in Rat Liver *C. Sharma, B. Radhakrishnamurthy, and G. S. Berenson* 615

N-Terminal Amino Acid Sequences of the Hemopexins from Chicken, Rat, and Rabbit
D. Wellner, K.-C. Cheng, and U. Muller-Eberhard 622

Structure and Regulation of a Lignin Peroxidase Gene from *Phanerochaete chrysosporium*
Erika L. F. Holzbaur and Ming Tien 626

Cloning and Characterization of an α1-Antitrypsin-like Gene 12 kb Downstream of the Genuine α1-Antitrypsin Gene *M. H. Hofker, M. Nelen, E. C. Klasen, T. Nukiwa, D. Curiel, R. G. Crystal, and R. R. Frants* 634

Differential Redistribution of Protein Kinase C in Human Aldosteronoma Cells and Adjacent Adrenal Cells Stimulated with ACTH and Angiotensin II
Tatsuo Ishizuka, Kiyoshi Miura, Seiji Nagao, and Yoshinori Nozawa 643

Effects of an Anti-tumor Polysaccharide, Schizophyllan, on Interferon-γ and Interleukin 2 Production by Peripheral Blood Mononuclear Cells *Y. Sakagami, Y. Mizoguchi, T. Shin, S. Seki, K. Kobayashi, S. Morisawa, and S. Yamamoto* 650

Biochemical and Immunological Evidence for a Calcium Pump in Chromaffin Granules
Steven C. King, Thomas E. Ellenberger, and Stanley M. Goldin 656

Fluoride Inhibits Agonist-Induced Formation of Inositol Phosphates in Rat Cortex
Philip P. Godfrey and S. P. Watson 664

Cell-Specific Hypomethylation of the Pepsinogen Gene in Pepsinogen-Producing Cells
Masao Ichinose, Kazumasa Miki, Masae Tatematsu, Takakazu Mizuno, Mamoru Mutai, Chie Furihata, Yoshikazu Ichihara, Takeshi Ishihara, Masao Tanji, Hiroshi Oka, Yoshikazu Hinohara, Takayuki Takahashi, Takashi Kageyama, and Kenji Takahashi 670

Isolation of cDNA Clones of Rabbit Angiotensin Converting Enzyme: Identification of Two Distinct mRNAs for the Pulmonary and the Testicular Isozymes
S. N. Roy, J. Kusari, R. L. Soffer, C. Y. Lai, and G. C. Sen 678

Characterization of the Glucose Transporter from Rat Brain Synaptosomes
Monica V. Bhattacharyya and Jeffrey L. Brodsky 685

Reduction to Homozygosity at the SIS/PDGF-2 Locus in Human Mesenchymal Tumors
Dong M. Shin, Christine Ince, M. Shtalrid, J. S. Lee, Jung S. Ro, Ludvik Donner, Robert E. Ferrell, Waun K. Hong, David Wildrick, and Mark Blick 692

Evidence for the Presence of ANP-Precursor Material in the Rat Thymus
Angelika M. Vollmar and Rüdiger Schulz 700

Macrophage Cholesterol Removal by Triglyceride-Phospholipid Emulsions
Michael Aviram, Kevin Jon Williams, and Richard J. Deckelbaum 709

Conserved Amino Acid Residues Arginine 33 and Tyrosine 123 Are Critical for the Antiviral Activity of Murine Interferon-α1 *J. A. Kerry, M. J. Tymms, and A. W. Linnane* 714

Structural Similarity between the Macrophage Lectin Specific for Galactose/*N*-Acetylgalactosamine and the Hepatic Asialoglycoprotein Binding Protein
Masayuki Ii, Toshisuke Kawasaki, and Ikuo Yamashina 720

Brain Natriuretic Peptide-32: N-Terminal Six Amino Acid Extended Form of Brain Natriuretic Peptide Identified in Porcine Brain *Tetsuji Sudoh, Naoto Minamino, Kenji Kangawa, and Hisayuki Matsuo* 726

Regional Distribution of Immunoreactive Brain Natriuretic Peptide in Porcine Brain and Spinal Cord *Shuzo Ueda, Naoto Minamino, Tetsuji Sudoh, Kenji Kangawa, and Hisayuki Matsuo* 733

The Presence of Brain Natriuretic Peptide of 12,000 Da in Porcine Heart
Naoto Minamino, Masahito Aburaya, Shuzo Ueda, Kenji Kangawa, and Hisayuki Matsuo 740

Evidence for a New Ribonucleotide Reductase in Anaerobic *Escherichia coli*
Tamara Barlow 747

Expression of a P-Glycoprotein Gene Is Inducible in a Multidrug-Resistant Human Leukemia Cell Line *Volker Gekeler, Gerd Frese, Heyke Diddens, and Hans Probst* 754

Evidence for Two Distinct Potassium Channels in Avian Granulosa Cells
Elikplimi K. Asem, Jean-Louis Schwartz, Geoffrey A. R. Mealing, Benjamin K. Tsang, and James F. Whitfield 761

Stimulation by Inositol Trisphosphate and Tetrakisphosphate of a Protein Phosphatase
Jean Zwiller, Eileen M. Ogasawara, Stuart S. Nakamoto, and Alton L. Boynton 767

Different Susceptibilities of Melanoma Cells to Retinoic Acid-Induced Changes in Melanotic Expression *Michael Edward, Jean A. Gold, and Rona M. MacKie* 773

DNAse I Footprinting of Restriction Enzymes *Keith R. Fox* 779

Effect of Cytokines and Growth Factors on the Expression of Elastase Activity by Human Synoviocytes, Dermal Fibroblasts, and Rabbit Articular Chondrocytes
F. Rédini, C. Lafuma, J.-P. Pujol, L. Robert, and W. Hornebeck 786

Cell Membrane, but Not Circulating, Carcinoembryonic Antigen Is Linked to a Phosphatidylinositol-Containing Hydrophobic Domain
Fréderic Jean, Pascale Malapert, Geneviève Rougon, and Jacques Barbet 794

Association of the Dioxin Receptor with the M_r 90,000 Heat Shock Protein: A Structural Kinship with the Glucocorticoid Receptor
Marc Denis, Scott Cuthill, Ann-Charlotte Wikström, Lorenz Poellinger, and Jan-Åke Gustafsson 801

A 35-kDa Fragment from Gizzard Smooth Muscle Caldesmon That Induces F-Actin Bundles *Dominique Mornet, Marie-Cécile Harricane, and Etienne Audemard* 808

Lysozyme Kinetics in Low Water Activity Media: A Possible Hydration Memory
Véronique Larreta-Garde, Zu Feng Xu, Louis Lamy, Mohamed Mathlouthi, and Daniel Thomas 816

Demonstration of Endogenous Inhibitors for the Formation of 14,15-Oxido-5,8,11-eicosatrienoic Acid from Phosphatidylinositol in Bovine Lung Extract
Zhangling Xiao, Cosme Moreno, Leslie R. Ballou, and Wai Yiu Cheung 823

Synthesis of 2′,3′-Dideoxynucleosides by Enzymatic *trans*-Glycosylation
Dennis A. Carson and D. Bruce Wasson 829

The Phosphorylation of *Sorghum* Leaf Phospho*enol*pyruvate Carboxylase Is a Ca^{2+}-Calmodulin Dependent Process *Cristina Echevarría, Jean Vidal, Pierre Le Maréchal, Jeanne Brulfert, Raoul Ranjeva, and Pierre Gadal* 835

Secretion of Corticotropin Releasing Factor (CRF) and Vasopressin (AVP) into the Hypophysial Portal Blood of Conscious, Unrestrained Rams
A. Caraty, M. Grino, A. Locatelli, and C. Oliver 841

Feedback Inhibition of Bile Acid Synthesis in Cultured Pig Hepatocytes
Jaap Kwekkeboom, Eline M. van Voorthuizen, Hans M. G. Princen, and Herman Jan Kempen 850

Synthesis and Secretion of an Albumin-like Protein by Cultured Bovine Tracheal Gland Serous Cells *Jacky Jacquot, Gary Goldstein, Christian Sommerhoff, Rachid Benali, Edith Puchelle, and Carol B. Basbaum* 857

Novel Phospholipids with Aliphatic Dicarboxylic Acid Residues in a Lipid Extract from Bovine Brain *Akira Tokumura, Tsuyoshi Asai, Kenkichi Takauchi, Koumei Kamiyasu, Tadashi Ogawa, and Hiroaki Tsukatani* 863

Isolation of Antigenically Reactive Peptide Fragments and Localization of Antigenic Regions of α-Bungarotoxin *Lea-Yea Chuang and Chun-Chang Chang* 870

Epidermal Growth Factor Stimulates Phosphatidylinositol Turnover for 10 Hours in A431 Cells without Activation of Protein Kinase C
David M. Thompson, Jim Proctor, Michael Grant, and Craig Thomas 877

Protein Kinase C May Regulate Resting Anion Conductance in Vascular Smooth Muscle Cells *Akihiro Saigusa and Shinichiro Kokubun* 882

Inhibition of Deoxyribonuclease I Activity by Actin Covalently Crosslinked to Chick Brain Actin Depolymerizing Factor through Exposed Sulfhydryls
E. W. Daoud, S. M. Hayden, and J. R. Bamburg 890

Proopiomelanocortin Gene Expression in a Pheochromocytoma Using Upstream Transcription Initiation Sites *C. Rowan DeBold, Elizabeth E. Mufson, Judson K. Menefee, and David N. Orth* 895

Absence of Active Protein Kinase C in Ram Spermatozoa
E. R. S. Roldan and R. A. P. Harrison 901

An Abundant 56-kDa Protein with Low Affinity Androgen Binding: Another Member of the Steroid/Thyroid Receptor Family? *Klaus Wrogemann, Fred Pereira, Denise Belsham, Morris Kaufman, Leonard Pinsky, and Eduardo Rosenmann* 907

Cellular Localization of Insulin-Degrading Enzyme in Rat Liver Using Monoclonal Antibodies Specific for This Enzyme *Hiroyuki Akiyama, Kozui Shii, Koichi Yokono, Kazuyoshi Yonezawa, Shinkichi Sato, Keiichi Watanabe, and Shigeaki Baba* 914

Deoxycytidine Is Salvaged Not Only into DNA but Also into Phospholipid Precursors
Tatjana Spasokukotskaja, Giannis Spyrou, and Maria Staub 923

Immunophotoaffinity Labeling of the D_2-Dopamine Receptor
Hannah Kanety and Sara Fuchs 930

Possible Role of the Membrane Na^+/H^+ Antiport in Ornithine Decarboxylase Induction by L-Asparagine *Wang-Fun Fong and Che-Leung Law* 937

Estrogen-Induced Increase of Estrogen Receptor RNA in Human Breast Cancer Cells
R. Piva, E. Bianchini, V. L. Kumar, P. Chambon, and L. del Senno 943

Purification of Carboxyl Ester Lipase from Human Pancreas and the Amino Acid Sequence of the N-Terminal Region *Chi-Sun Wang* 950

The Glutathione Status of Rat Kidney Nuclei following Administration of Buthionine Sulfoximine *Mark A. Tirmenstein and Donald J. Reed* 956

Thiol Group Reactivity and Polymerization of Actin in the Presence of ATP Analogs
Christos Stournaras, Ingeborg Merkler, and Heinz Faulstich 962

Identification of a New Member of the Steroid Receptor Super-Family by Cloning and Sequence Analysis *C. Chang and J. Kokontis* 971

The Inhibition of Calcium Efflux from Rat Liver Mitochondria by Halogenated Anesthetics
D. Branca, M. L. Varotto, E. Vincenti, and G. Scutari 978

Evidence for Two Conductance/Exchange Pathways for Chloride in Rat Parotid Secretory Granules *M. K. Goddard, K. T. Izutsu, D. E. Johnson, W. Y. Ensign, Jr., S. M. Izutsu, L. E. Wilkinson, S. W. Chen, and J. L. Wong* 984

Strategies for the *in Vivo* Inhibition of Endogenous Atriopeptin
Moriyuki Sakata and Philip Needleman 990

Elevated c-*myc* Expression of Progeria Fibroblasts
Kenji D. Nakamura, Angelo Turturro, and Ronald W. Hart 996

Separation of Anticardiolipin Antibodies from Lupus Anticoagulant on a Phospholipid-Coated Polystyrene Column *T. Exner, N. Sahman, and B. Trudinger* 1001
Occurrence of a Cobalt-Induced and Cobalt-Containing Nitrile Hydratase in *Rhodococcus rhodochrous* J1 *Toru Nagasawa, Koji Takeuchi, and Hideaki Yamada* 1008
Identification of Isoenzymatic Forms of Hepatic Ca^{2+}-Activated Phospholipid-Dependent Protein Kinase in Various Animal Models *Salman Azhar, John Butte, and Eve Reaven* 1017
Affinity Modification of NADPH–Cytochrome *P*-450 Reductase *Irina A. Slepneva and Lev M. Weiner* 1026
Polyunsaturated Fatty Acids Stimulate Superoxide Formation in Tumor Cells: A Mechanism for Specific Cytotoxicity and a Model for Tumor Necrosis Factor? *D. A. Peterson, N. Mehta, J. Butterfield, M. Husak, M. M. Christopher, S. Jagarlapudi, and J. W. Eaton* 1033
Progesterone and Prolactin Are Both Required for Suppression of the Induction of Rat α-Lactalbumin Activity *Lakshmanan Sankaran and Yale J. Topper* 1038
Kinetic Study of the Reaction between Vitamin E Radical and Alkyl Hydroperoxides in Solution *Kazuo Mukai, Yasuhiro Kohno, and Kazuhiko Ishizu* 1046
Photoaffinity Labeling with GTP-γ-Azidoanilide of a Cholera Toxin-Sensitive 40-kDa Protein from Pancreatic Acinar Cells *Rainer Schäfer, Anna-Luise Christian, and Irene Schulz* 1051
Hemostasis in Larvae of *Manduca sexta:* Formation of a Fibrous Coagulum by Hemolymph Proteins *Chaoxian Geng and Peter E. Dunn* 1060
Effect of Arylidene-Cyclopentenedione Radiosensitizers on ATP Synthesis in Mitochondria: Action as Potent Inhibitors of Phosphate Transport *Haruhiko Koike, Hitoshi Hori, Seiichi Inayama, and Hiroshi Terada* 1066
Hydroperoxidase Activity of Lipoxygenase: Hydrogen Peroxide-Dependent Oxidation of Xenobiotics *Arun P. Kulkarni and Dorn C. Cook* 1075
Carrier-Mediated Uptake of Cephalexin in Human Intestinal Cells *Anne H. Dantzig and Linda Bergin* 1082

Volume 155, Number 3, September 30, 1988

AUTHOR INDEX, Volume 155, Number 3, September 30, 1988 iii
Effect of Interleukin 1β on Transducing Mechanisms in 235-1 Clonal Pituitary Cells. I: Modulation of Adenylate Cyclase Activity *Gennaro Schettini, Tullio Florio, Olimpia Meucci, Giuseppe Scala, Elisa Landolfi, and Maurizio Grimaldi* 1089
Effect of Interleukin 1β on Transducing Mechanisms in 235-1 Clonal Pituitary Cells. II: Modulation of Calcium Fluxes *Gennaro Schettini, Olimpia Meucci, Tullio Florio, Giuseppe Scala, Elisa Landolfi, and Maurizio Grimaldi* 1097
Human Monoclonal Antibody against Glycoproteins of Human Immunodeficiency Virus *Torus Sugano, Yasuhiko Masuho, Yoh-ichi Matsumoto, Douglas Lake, Charles Gschwind, Eskild A. Petersen, and Evan M. Hersh* 1105
Oestrogen Regulates Oestrogen Receptor mRNA Levels in an Oestrogen-Responsive Human Breast Cancer Cell Line *Bruce R. Westley and Felicity E. B. May* 1113
Transamination of LTE_4 by Cysteine Conjugate Aminotransferase *Hiroki Tomisawa, Yohko Takanohashi, Shigeyasu Ichihara, Hideo Fukazawa, and Mitsuru Tateishi* 1119
Presence of Sialic Acids in *Lactobacillus plantarum* *George Sakellaris, Fragiskos N. Kolisis, and Athanasios E. Evangelopoulos* 1126
Regulation of Glutamine Synthetase Activity by Phosphorylation instead of by Adenylylation *Kinuko Kimura, Hazumi Suzuki, and Yoshio Nakano* 1133
Chemotactic Monoclonal Antibody Conjugates: A Comparison of Four Different f-Met–Peptide Conjugates *R. Obrist, J. Schmidli, and J. P. Obrecht* 1139
Diffusional Effects in the Steady-State Kinetics of Ubiquinol Cytochrome *c* Reductase in Bovine Heart Submitochondrial Particles *Romana Fato, Cinzia Castelluccio, Stefania Armaroli, Alberto Contarini, Giovanna Parenti Castelli, and Giorgio Lenaz* 1145

Elevation of PMN Cytosolic Free Calcium and Locomotion Stimulated by Novel Peptides from IL-1-Treated Human Synovial Cell Cultures
M. L. Watson, J. Westwick, N. J. Fincham, and R. D. R. Camp 1154

Purification of Basic Fibroblast Growth Factor from Rat Brain: Identification of a M_r 22,000 Immunoreactive Form *M. Presta, M. Rusnati, J. A. M. Maier, and G. Ragnotti* 1161

Possible Binding Sites for Inositol 1,4,5-Trisphosphate in Macrophages
Toyohiro Ishimatsu, Yuichi Kimura, Tetsuro Ikebe, Koji Yamaguchi, Toshitaka Koga, and Masato Hirata 1173

Insulin-Induced Tyrosine-Phosphorylation in Intact Rat Adipocytes
Kaoru Momomura, Kazuyuki Tobe, Yousuke Seyama, Fumimaro Takaku, and Masato Kasuga 1181

Receptor Binding and Nb2 Cell Mitogenic Activities of Glycosylated vs Unglycosylated Porcine Prolactin *Paul R. Atkinson, James E. Seely, Harold G. Klemcke, and James P. Hughes* 1187

Ternary Hydroxide Complexes in Neutral Solutions of Al^{3+} and F^- *R. Bruce Martin* 1194

Peptidyl *O*-Acyl Hydroxamates: Potent New Inactivators of Cathepsin B
Roger A. Smith, Peter J. Coles, Robin W. Spencer, Leslie J. Copp, Christopher S. Jones, and Allen Krantz 1201

Phosphorylation of Protein B-50 (GAP-43) from Adult Rat Brain Cortex by Casein Kinase II
Michael R. Pisano, Mohammed G. Hegazy, Erwin M. Reimann, and Linda A. Dokas 1207

Expression of Human Gγ Globin Genes Carrying a T or a C at Position -158 in COS and MEL Cells *Joelle Starck, Chun Sheng Qiao, François Morlé, Patrick Charnay, and Jacqueline Godet* 1213

Doxorubicin Induces the Acetylation of Histone H1 in a Human Colon Cancer Cell Line (LoVo/DX) Selected for Resistance to the Drug, but Not in the Sensitive Parental Line (LoVo) *Cecilia Mannironi and Maurizio D'Incalci* 1221

Cellular and Molecular Regulation of Tumor Necrosis Factor-α Production by Pentoxifylline
R. M. Strieter, D. G. Remick, P. A. Ward, R. N. Spengler, J. P. Lynch III, J. Larrick, and S. L. Kunkel 1230

Ouabain Sensitivity of a Chimeric α Subunit (*Torpedo*/Rat) of the (Na,K)ATPase Expressed in *Xenopus* Oocytes *Shunsuke Noguchi, Toshiko Ohta, Kazuo Takeda, Michihiro Ohtsubo, and Masaru Kawamura* 1237

Endothelin Inhibits Renin Release from Isolated Rat Glomeruli *Hiromi Rakugi, Mitsuaki Nakamaru, Hiroshi Saito, Jitsuo Higaki, and Toshio Ogihara* 1244

Reduced Thioredoxin: A Possible Physiological Cofactor for Vitamin K Epoxide Reductase. Further Support for an Active Site Disulfide
Richard B. Silverman and Dhirendra L. Nandi 1248

Comparative Quantum-Chemical Analysis of the Electronic Structure and Mössbauer Parameters of the Active Site Models for Deoxymyoglobin and α- and β-Subunits of Tetrameric Deoxyhemoglobin *V. I. Khleskov, B. N. Burykin, A. B. Smirnov, and M. I. Oshtrakh* 1255

Release of 7-Alkylguanines from Haloethylnitrosourea-Treated DNA by *Escherichia coli* 3-Methyladenine-DNA Glycosylase II *Christopher A. Carter, Yvette Habraken, and David B. Ludlum* 1261

A Human Genomic Sequence Highly Homologous to the 3′-Untranslated Region of Rat Uricase mRNA *Kiyoto Motojima and Sataro Goto* 1266

Reconstitution of Adenosine 3′-Phosphate 5′-Phosphosulfate Transporter from Rat Brain
M. E. Zaruba, N. B. Schwartz, and G. I. Tennekoon 1271

The Nucleolar Protein, B-36, Contains a Glycine and Dimethylarginine-Rich Sequence Conserved in Several Other Nuclear RNA-Binding Proteins
Mark E. Christensen and Kathleen P. Fuxa 1278

Multiple Small-Molecular-Weight GTP-Binding Proteins in Bovine Brain Cytosol: Purification and Characterization of a 24-kDa Protein
Katsuhiko Yamamoto, Shigekuni Kim, Akira Kikuchi, and Yoshimi Takai 1284

3,3′,5-L-Triiodothyronine but Not L-Thyroxine Can Block the Induction of Tyrosinase by Imidazole in Cultured B16 Melanoma Cells *Terry J. Smith and Ellis L. Kline* 1293
Nucleotide Sequence of Rat Liver Iodothyronine 5′-Monodeiodinase (5′MD): Its Identity with the Protein Disulfide Isomerase *Ruben J. Boado, David A. Campbell, and Inder J. Chopra* 1297
Effects of the Polysaccharide Chain of Lipopolysaccharide in an Experimental Massive Hepatic Cell Necrosis Model *Y. Mizoguchi, Y. Sakagami, H. Kuboi, K. Kobayashi, and I. Yano* 1305
Increased Degradation of Protein Kinase C without Diminution of mRNA Level after Treatment of WEHI-231 B Lymphoma Cells with Phorbol Esters *Junichiro Mizuguchi, Hiroki Nakabayashi, Yasuyoshi Yoshida, Kuo-Ping Huang, Tetsuya Uchida, Tsuguo Sasaki, Shigeo Ohno, and Koichi Suzuki* 1311
The Cysteine Proteinase Inhibitor, E-64, Reduces Proteinuria in an Experimental Model of Glomerulonephritis *William H. Baricos, Sally E. O'Connor, Shirley L. Cortez, Li-Teh Wu, and Sudhir V. Shah* 1318
Expression of the *HST1* Oncogene in Human Germ Cell Tumors *Teruhiko Yoshida, Masakazu Tsutsumi, Hiromi Sakamoto, Kiyoshi Miyagawa, Shinichi Teshima, Takashi Sugimura, and Masaaki Terada* 1324
Identification of a 29-Amino Acid Natriuretic Peptide in Chicken Heart *Atsuro Miyata, Naoto Minamino, Kenji Kangawa, and Hisayuki Matsuo* 1330
Identification of New Atrial Natriuretic Peptides in Frog Heart *Jun-ichiro Sakata, Kenji Kangawa, and Hisayuki Matsuo* 1338
Augmentation and Stable Expression of a Novel Transcription Factor SII in CD4-Positive Cells on Infection with Human Immunodeficiency Virus Type-1 (HIV-1) *Yoshiaki Hamamoto, Shoji Hirashima, Shunji Natori, Naoki Yamamoto, and Nobuyuki Kobayashi* 1346
A Simple *in Situ* Cyanogen Bromide Cleavage Method to Obtain Internal Amino Acid Sequence of Proteins Electroblotted to Polyvinyldifluoride Membranes *Mitchell G. Scott, Daniel L. Crimmins, David W. McCourt, Jeffrey J. Tarrand, Margaret C. Eyerman, and Moon H. Nahm* 1353
Mitochondrial DNA in Anucleate Human Blood Cells *Robert C. Shuster, Andrew J. Rubenstein, and Douglas C. Wallace* 1360
Structure of the Mouse Serum Amyloid P Component Gene *Seiji Nishiguchi, Shuichiro Maeda, Shukuro Araki, and Kazunori Shimada* 1366
Activation of Rat Brain Protein Kinase C by Lipid Oxidation Products *Catherine A. O'Brian, Nancy E. Ward, I. Bernard Weinstein, Arthur W. Bull, and Lawrence J. Marnett* 1374
Inhibition of *in Vitro* Amino Acylation and Translation by Adenosine Antibodies *Y. N. Vaishnav and A. Antony* 1381
Properties of Protein Kinase C. Subspecies in Human Platelets *Masanori Tsukuda, Yoshinori Asaoka, Kazuo Sekiguchi, Ushio Kikkawa, and Yasutomi Nishizuka* 1387
Native Chromatin and Damage Induced by Nuclease *C. Nicolini, L. Vergani, A. Diaspro, and P. Scelza* 1396
Fuchsin Acid Selectively Inhibits Human Immunodeficiency Virus (HIV) Replication *in Vitro* *Masanori Baba, Dominique Schols, Rudi Pauwels, Jan Balzarini, and Erik De Clercq* 1404
Electron Spin Resonance Study of Light-Induced Conformational Changes in Nitroxide Labelled Bovine Rhodopsin *Jeremy I. Rowntree and Anthony Watts* 1412
Interaction of the 5′-Phosphates of the Anti-HIV Agents, 3′-Azido-3′-deoxythymidine and 3′-Azido-2′,3′-dideoxyuridiine, with Thymidylate Synthase *Jolanta M. Dzik, Maria Bretner, Tadeusz Kulikowski, Joanna Cieśla, Jarosław M. Cieśla, Wojciech Rode, and David Shugar* 1418
Identification of Retinol as One of the Protein HC Chromophores *Julio Escribano, Anders Grubb, and Enrique Méndez* 1424

Secretory Granules from Different Glands Contain Neurocuprein-like Protein
M. V. Mikaelyan, K. A. Markossian, N. A. Paitian, S. G. Sharoyan, and R. M. Nalbandyan 1430

Atrial Natriuretic Factor Increases the Magnitude of Duodenal Spontaneous Phasic Contractions *Dennis A. Baeyens, J. Michael Walters, and David L. Vesely* 1437

Rabbit and Rat Hepatic Lectins Have Two Sugar-Combining Sites per Monomeric Unit
Reiko T. Lee and Yuan C. Lee 1444

Calcitonin Gene-Related Peptide (CGRP) Stimulates the Release of Atrial Natriuretic Peptide (ANP) from Isolated Rat Atria *Akira Yamamoto, Shouji Kimura, Kouichi Hasui, Yoshihide Fujisawa, Toshiaki Tamaki, Kiyoshi Fukui, Hiroshi Iwao, and Youichi Abe* 1452

Interleukin-6 Stimulates the Secretion of Adrenocorticotropic Hormone in Conscious, Freely Moving Rats *Yoshiyuki Naitoh, Junichi Fukata, Tomoko Tominaga, Yoshikatsu Nakai, Sunao Tamai, Kenjiro Mori, and Hiroo Imura* 1459

Fast Disassembly of Microtubules Induced by Mg^{2+} or Ca^{2+}
Vera Gal, Stephen Martin, and Peter Bayley 1464

The Increase in Hepatic Tyrosine Aminotransferase Activity by Ethanol Administration Involves an Acceleration of Enzyme Synthesis
Terrence M. Donohue, Jr., John F. Hofert, and Rowen K. Zetterman 1471

Specific Guanine Nucleotide Binding by Membranes from *Cucurbita pepo* Seedlings
M. Jacobs, M. P. Thelen, R. W. Farndale, M. C. Astle, and P. H. Rubery 1478

ERRATA

Volume 152, Number 3, May 16, 1988: Michael T. Brewer, Gary L. Stetler, Charles H. Squires, Robert C. Thompson, Walker H. Busby, and David R. Clemmons, "Cloning, Characterization, and Expression of a Human Insulin-like Growth Factor Binding Protein," pp. 1289–1297 1485

Volume 153, Number 1, May 31, 1988: Robert E. Hurst, Richard L. Bynum, Sharon E. Einfeldt, and Johnny B. Roy, "The Identification of a Heparin-Binding Protein on the Surface of Bovine Sperm," pp. 289–293 1485

Author Index for Volume 155 1486

Volume 156, Number 1, October 14, 1988

AUTHOR INDEX, Volume 156, Number 1, October 14, 1988 iii

HL-60 Cells Become Resistant toward Antitumor Ether-Linked Phospholipids following Differentiation into a Granulocytic Form *David S. Vallari, Zigrida L. Smith, and Fred Snyder* 1

Bis-Pyridoxal Polyphosphates: A New Class of Specific Intramolecular Crosslinking Agents for Hemoglobin *Ruth E. Benesch and Suzanna Kwong* 9

Physiological Concentrations of Atrial Natriuretic Factor Stimulate Human Erythroid Progenitors *in Vitro* *Eero Niskanen and Alex J. Baertschi* 15

Physicochemical Characterization of [^{3}H]DHEA Binding in Rat Liver
Mohammed Kalimi and William Regelson 22

Proteolytic Activity in the Insulin Receptor
Eleazar C. Vega-SaenzdeMiera and Boanerges Rubalcava 30

A Genuine Organ Specific Alcohol Dehydrogenase from Hamster Testes: Isolation, Characterization, and Developmental Changes *Wing-Ming Keung* 38

Anti-HLA Class I Monoclonal Antibody Effect on PKC Kinetics in PHA Activated Human Peripheral Blood Mononuclear and E^+ Cells
Licia Poltronieri, Edon Melloni, Michele Rubini, Rita Selvatici, Cristina Mazzilli, Roberto Baricordi, and Enrico Gandini 46

Reconstitution of Partially Purified Opioid Receptors with a GTP-Binding Protein
Toshiyuki Fujioka, Fumiko Inoue, Sachiyo Sumita, and Masayuki Kuriyama 54

Identification of a High-Affinity Receptor for Interleukin-1β in Rat Brain
Goro Katsuura, Paul E. Gottschall, and Akira Arimura 61

Exon–Intron Organization of a Gene for Pregnancy-Specific β_1-Glycoprotein, a Subfamily Member of CEA Family: Implications for Its Characteristic Repetitive Domains and C-Terminal Sequences
Shinzo Oikawa, Chikako Inuzuka, Goro Kosaki, and Hiroshi Nakazato 68

High Affinity Receptors for Atrial Natriuretic Factor in PC12 Cells
A. Rathinavelu and G. E. Isom 78

Evidence for Light-Induced Lysine Conformational Changes during the Primary Event of the Bacteriorhodopsin Photocycle
Earl McMaster and Aaron Lewis 86

Affinity Purification of Human Deoxycytidine Kinase: Avoidance of Structural and Kinetic Artifacts Arising from Limited Proteolysis
Min-Young Kim, Seiichiro Ikeda, and David H. Ives 92

A Consensus Sequence in the N-Terminus of Exported Proteins: Resemblance with Metal Binding Domains and Implications in Protein Translocation across Membranes
Panagiotis A. Tsonis, Janusz M. Sowadski, and Paul F. Goetinck 99

Mitogenic Activity in Ovine Uterine Fluids: Characterization of a Growth Factor Activity Which Specifically Stimulates Myoblast Proliferation
R. Curtis Bird, Frank F. Bartol, Harlow Daron, David A. Stringfellow, and M. Gatz Riddell 108

Chemical Characterization by Protein Sequence Analysis of the Bovine Estrogen Receptor
Thomas Ratajczak, Martine J. Brockway, Roland Hähnel, Robert L. Moritz, and Richard J. Simpson 116

Dermorphin Analogs: Resistance to *in Vitro* Enzymatic Degradation Is Not Always Increased by Additional D-Amino Acid Substitutions
Krzysztof Darlak, Deanne E. Benovitz, Arno F. Spatola, and Zbigniew Grzonka 125

Almost Total Conversion of Pancreas to Liver in the Adult Rat: A Reliable Model to Study Transdifferentiation
M. S. Rao, R. S. Dwivedi, V. Subbarao, M. I. Usman, D. G. Scarpelli, M. R. Nemali, A. Yeldandi, S. Thangada, S. Kumar, and J. K. Reddy 131

On the Mechanism of the Chromate Reduction by Glutathione: ESR Evidence for the Glutathionyl Radical and an Isolable Cr(V) Intermediate
Xianglin Shi and N. S. Dalal 137

Rapid Purification of Inositol Monophosphate Phosphatase from Beef Brain
James L. Meek, Timothy J. Rice, and Elizabeth Anton 143

Spacial Isolation of Protein Kinase C Activation in Thrombin Stimulated Human Platelets
Michael F. Crouch and Eduardo G. Lapetina 149

A Lecithin:Retinol Acyltransferase Activity in Human and Rat Liver
Paul N. MacDonald and David E. Ong 157

Brush Border Membrane Vesicles Formed from Human Duodenal Biopsies Exhibit Na^+-Dependent Concentrative L-Leucine and D-Glucose Uptake
James M. Harig, Konrad H. Soergel, Jeanne Barry, and Krishnamurthy Ramaswamy 164

Three Growth Hormone- and Two Prolactin-Related Novel Peptides of M_r 13,000–18,000 Identified in the Anterior Pituitary
Y. N. Sinha and B. P. Jacobsen 171

Domain Structure of Cellobiohydrolase II as Studied by Small Angle X-Ray Scattering: Close Resemblance to Cellobiohydrolase I
Peter M. Abuja, Ingrid Pilz, Marc Claeyssens, and Peter Tomme 180

Endothelin and Ca^{2+} Agonist Bay K 8644: Different Vasoconstrictive Properties
Michel Auguet, Sylvie Delaflotte, Pierre-Etienne Chabrier, Eduardo Pirotzky, François Clostre, and Pierre Braquet 186

Calcimedin, Calelectrin: Correlation of Relatedness
Pamela B. Moore 193

Growth Hormone-Dependent Insulin-like Growth Factor (IGF) Binding Protein Both Inhibits and Potentiates IGF-I-Stimulated DNA Synthesis in Human Skin Fibroblasts
John S. M. De Mellow and Robert C. Baxter 199

Synthesis of Nuclear Lamins in BHK-21 Cells Synchronized with Aphidicolin
Sylvain Foisy and Viviane Bibor-Hardy 205
Potassium Ion-Dependent Proton Efflux and Depolarization from Spleen Lysosomes
Yoshinori Moriyama 211
Release of Peptide Leukotrienes from Rat Kupffer Cells
Yoshihide Sakagami, Yasuhiro Mizoguchi, Shuichi Seki, Kenzo Kobayashi, Seiji Morisawa, and Sukeo Yamamoto 217
DNA-Binding Proteins in Protein Kinase C Preparations
Alessandro Testori, Charles S. T. Hii, Agnes Fournier, Leigh A. Burgoyne, and Andrew W. Murray 222
Water Immersion Increases the Concentration of the Immunoreactive N-Terminal Fragment of Proatrial Natriuretic Factor in Human Plasma
Alexander L. Gerbes and Angelika M. Vollmar 228
The Effect of Cyclosporin A on the Growth and Prolactin Binding to Nb-2 Rat Lymphoma Cells *Shobha Varma and Kurt E. Ebner* 233
Norepinephrine Stimulates the Production of Inositol Trisphosphate and Inositol Tetrakisphosphate in Rat Aorta *Vivian Pijuan and Irene Litosch* 240
Yeast *KEX2* Gene Encodes an Endopeptidase Homologous to Subtilisin-like Serine Proteases *Kensaku Mizuno, Tomoko Nakamura, Takehiro Ohshima, Shoji Tanaka, and Hisayuki Matsuo* 246
The Calcium Channel Antagonist ω-Conotoxin Inhibits Secretion from Peptidergic Nerve Terminals *G. Dayanithi, N. Martin-Moutot, S. Barlier, D. A. Colin, M. Kretz-Zaepfel, F. Couraud, and J. J. Nordmann* 255
Effect of Retinoic Acid on cAMP-Dependent Protein Phosphorylation in Psoriatic Fibroblasts *F. Raynaud, C. Liapi, P. Gerbaud, W. B. Anderson, and D. Evain-Brion* 263
The Transcription of the Interleukin 1β Gene Is Induced with PMA and Inhibited with Dexamethasone in U937 Cells *Tsutomu Nishida, Masaaki Takano, Takuma Kawakami, Naoki Nishino, Satoru Nakai, and Yoshikatsu Hirai* 269
Thyroid Hormone Action on Glucose Transporter Activity in Astrocytes
Lois M. Roeder, Irene B. Hopkins, Jeffrey R. Kaiser, Lea Hanukoglu, and J. Tyson Tildon 275
Purification and Characterization of a Cytochrome P450 Isozyme Isolated from the Liver of Rats Pretreated with Clofibrate *Liliane Kiffel, Chantal Célier, and Jean-Paul Leroux* 282
An Insulin Mediator Preparation Serves to Stimulate the Cyclic GMP Activated Cyclic AMP Phosphodiesterase Rather than Other Purified Insulin-Activated Cyclic AMP Phosphodiesterases *Nigel J. Pyne and Miles D. Houslay* 290
HIV-1 Protease Specificity of Peptide Cleavage Is Sufficient for Processing of gag and pol Polyproteins *Paul L. Darke, Ruth F. Nutt, Stephen F. Brady, Victor M. Garsky, Terrence M. Ciccarone, Chih-Tai Leu, Patricia K. Lumma, Roger M. Freidinger, Daniel F. Veber, and Irving S. Sigal* 297
Amino Acid Composition and Proteolytic Generated Domains of Higher Plant Tubulin
Pascal Picquot, Marylin Vantard, Iradj Amiri, Luc Fausser, and Anne-Marie Lambert 304
Does Endothelin Mobilize Calcium from Intracellular Store Sites in Rat Aortic Vascular Smooth Muscle Cells in Primary Culture?
Nobuco Miasiro, Hiromichi Yamamoto, Hideo Kanaide, and Motoomi Nakamura 312
Characterization of Two Glycoproteins of Human Pancreatic Juice: P35, a Truncated Protease E, and P19, Precursor of Protein X
O. Guy-Crotte, C. Barthe, D. Basso, B. Fournet, and C. Figarella 318
N-Acylated Pentapeptide Antagonists of Substance P on Guinea Pig Ileum
Pascal Schmitt, Michel Mayer, Sylviane Magneney, Robert Michelot, and Pierre Potier 323

Evidence that a GTP Binding Protein Regulates Phosphorylation of the CD3 Antigen in Human T Lymphocytes *Adelina A. Davies, J. Mark Hexham, Doreen A. Cantrell, and Michael J. Crumpton* 328

A Novel Action of Activin A: Stimulation of Insulin Secretion in Rat Pancreatic Islets *Yasuo Totsuka, Mari Tabuchi, Itaru Kojima, Hiroshiro Shibai, and Etsuro Ogata* 335

RNA Mediated Formation of a Phosphorothioate Diester Bond *Jamal M. Buzayan, Paul A. Feldstein, George Bruening, and Fritz Eckstein* 340

Interaction between α1 and β1 Subunits of Human Hemoglobin *Yasuko Kawamura-Konishi and Haruo Suzuki* 348

Isolation and Structural Determination of Rat Neuromedin U *Naoto Minamino, Kenji Kangawa, Mayumi Honzawa, and Hisayuki Matsuo* 355

Different Types of ADP-Ribose Protein Bonds Formed by Botulinum C2 Toxin, Botulinum ADP-Ribosyltransferase C3, and Pertussis Toxin *Klaus Aktories, Ingo Just, and Walter Rosenthal* 361

Identification of Glutathione *S*-Transferase as a Substrate and Glutathione as an Inhibitor of *in Vitro* Calmodulin-Stimulated Protein Methylation in Rat Liver Cytosol *Tom L. Neal, Lynda S. Wright, and Frank L. Siegel* 368

Discrepancies between the Affinities of Binding and Action of the Novel β-Adrenergic Agonist BRL 37344 in Rat Brown Adipose Tissue *Patrick Muzzin, Josiane Seydoux, Jean-Paul Giacobino, John-Craig Venter, and Claire Fraser* 375

Plasminogen Activator Inhibitor 2: Isolation and Characterization of the Promoter Region of the Gene *E. K. O. Kruithof and E. Cousin* 383

Structure of the Human Blood Platelet Membrane Glycoprotein Ibα Gene *Roland H. Wenger, Nelly Kieffer, Andreas N. Wicki, and Kenneth J. Clemetson* 389

Different Roles of the Diphosphate Moieties of Allylic and Homoallylic Diphosphates in Prenyltransferase Reaction *Takeshi Gotoh, Tanetoshi Koyama, and Kyozo Ogura* 396

Saposin D: A Sphingomyelinase Activator *Satoshi Morimoto, Brian M. Martin, Yasuo Kishimoto, and John S. O'Brien* 403

Lectins Inhibit Cell Binding and Spreading on a Laminin Substrate *John W. Dean III, S. Chandrasekaran, and Marvin L. Tanzer* 411

Slipped DNA Structures within the Enhancer Region of the Moloney Murine Leukemia Virus *Miguel A. Gama Sosa, Jessica C. Hall, and Ruth M. Ruprecht* 417

Cyclic AMP Decreases LDL Catabolism and Cholesterol Synthesis in the Human Hepatoma Cell Line HepG2 *Cécile Maziere, Jean-Claude Maziere, Suzanne Salmon, Martine Auclair, Liliana Mora, Martine Moreau, and Jacques Polonovski* 424

Antisera to an Amino-Terminal Peptide Detect the Amyloid Protein Precursor of Alzheimer's Disease and Recognize Senile Plaques *Mark R. Palmert, Marcia Berman Podlisny, Dennis S. Witker, Tilman Oltersdorf, Linda H. Younkin, Dennis J. Selkoe, and Steven G. Younkin* 432

An Investigation of Human Oxyhemoglobin β Tetramer Dissociation Using Haptoglobin Binding *Linda A. Michalski and Melisenda J. McDonald* 438

Partial Amino Acid Sequence Analysis of Human Placenta Monoamine Oxidase A and Bovine Liver Monoamine Oxidase B *Shiuan Chen and Walter Weyler* 445

Ribulose 1,5-Bisphosphate-Dependent CO_2 Fixation in the Halophilic Archaebacterium, *Halobacterium mediterranei* *Nenoo Rawal, S. M. Kelkar, and Wijaya Altekar* 451

Unregulated Secretion of an Exogenous Glycotripeptide by Rat Islets and HIT Cells *Gerald Gold, Felix T. Wieland, and Gerold M. Grodsky* 457

IL1/ETAF Activity and Undetectable IL1β mRNA and Minimal IL1α mRNA Levels in Normal Adult Heat-Separated Epidermis *Stephen Demczuk* 463

In Vitro Demonstration by the Rate Assay of the Presence of Small Pores in the Outer Membrane of *Pseudomonas aeruginosa* *Eisaku Yoshihara, Naomasa Gotoh, and Taiji Nakae* 470

Fibrinogen Association with Human Monocytes: Evidence for Constitutive Expression of Fibrinogen Receptors and for Involvement of Mac-1 (CD18, CR3) in the Binding *Cristina Trezzini, Thomas W. Jungi, Peter Kuhnert, and Ernst Peterhans* 477

Transient Accumulation of Inositol (1,3,4,5)-Tetrakisphosphate in Response to α_1-Adrenergic Stimulation in Adult Cardiac Myocytes
Guy P. Heathers, Peter B. Corr, and Leona J. Rubin 485
Evidence for a Differential Physiological Modulation of Brown Fat Iodothyronine 5′-Deiodinase Activity in the Perinatal Period
M. Giralt, I. Martin, T. Mampel, F. Villarroya, R. Iglesias, and O. Viñas 493
Characterization of Epitopes on the Cationic Peanut Peroxidase by Four Monoclonal Antibodies *Chunfang Hu and Robert B. van Huystee* 500
Paradoxical Protection of Both Protein-Free and High Protein Diets against Acute Ammonium Intoxication *Vicente Felipo, María-Dolores Miñana, and Santiago Grisolía* 506
Abscisic Acid Enhances Aggregation and Fusion of Phospholipid Vesicles
William Stillwell, Blair Brengle, and Stephen R. Wassall 511
Molecular Cloning of the Nosiheptide Resistance Gene from *Streptomyces actuosus* ATCC 25421 *Donald C. Dosch, William R. Strohl, and Heinz G. Floss* 517
15-Hydroxyeicosatetraenoic Acid Dehydrogenase Activity in Microsomal Fraction of Mouse Liver Homogenate *Dai-Eun Sok, Jun Bu Kang, and Hong Dae Shin* 524
Sites of Modification of Human Angiogenin by Bromoacetate at pH 5.5
Robert Shapiro, Daniel J. Strydom, Stanislawa Weremowicz, and Bert L. Vallee 530
Site-Directed Mutagenesis at the Regulatory Site of Fructose-6-phosphate 1-Kinase from *Bacillus stearothermophilus* *B. C. Valdez, S. H. Chang, and E. S. Younathan* 537
Biosynthesis of 12-Oxo-10,15(*Z*)-phytodienoic Acid: Identification of an Allene Oxide Cyclase *Mats Hamberg* 543
Enterotoxin of *Clostridium perfringens* Type A Forms Ion-Permeable Channels in a Lipid Bilayer Membrane *Nakaba Sugimoto, Masayuki Takagi, Kunihiro Ozutsumi, Shigeko Harada, and Morihiro Matsuda* 551
Excision Repair in Xeroderma Pigmentosum Group C Cells Is Regulated Differently in Transformed Cells and Primary Fibroblasts *James E. Cleaver* 557
Evidence for the Expression of a Primitive Intestinal-like Alkaline Phosphatase in the Intestinal 407 Cell Line *Kazuyuki Hirano, Tomikazu Kusano, Kentaro Asai, Kyozo Hayashi, Torgny Stigbrand, Shiro Iino, and Jose L. Millan* 563
Insulin and Glucose Modulate Protein Kinase C Activity in Rat Adipocytes
Boris Draznin, J. Wayne Leitner, Karl E. Sussman, and Nancy A. Sherman 570
The Complete Nucleotide Sequence of Human Liver Cytochrome b_5 mRNA
Min Yoo and Alan W. Steggles 576
Apolipoprotein B-100 Is the Major Form of This Apolipoprotein Secreted by Human Intestinal Caco-2 Cells *Diana M. Lee, Nassrin Dashti, and Tina Mok* 581
Heterologous Up-Regulation of the 1,25-Dihydroxyvitamin D_3 Receptor by Parathyroid Hormone (PTH) and PTH-like Peptide in Osteoblast-like Cells
H. A. P. Pols, J. P. T. M. van Leeuwen, J. P. Schilte, T. J. Visser, and J. C. Birkenhäger 588
Isolation of the Human Platelet Glycoprotein IIb Gene and Characterization of the 5′ Flanking Region *M. H. Prandini, E. Denarier, P. Frachet, G. Uzan, and G. Marguerie* 595
Purification of the D-2 Dopamine Receptor from Bovine Striatum
Zvulun Elazar, Hannah Kanety, Carol David, and Sara Fuchs 602
ERRATUM
Volume 154, Number 2, July 29, 1988: A. Pietrangelo, A. Cossarizza, D. Monti, E. Ventura, and C. Franceschi, "DNA Repair in Lymphocytes from Humans and Rats with Chronic Iron Overload," pp. 698–704 610

Volume 156, Number 2, October 31, 1988

AUTHOR INDEX, Volume 156, Number 2, October 31, 1988 iii
Basic Fibroblast Growth Factor (FGF) Promotes Cartilage Repair *in Vivo*
Pedro Cuevas, Jesus Burgos, and Andrew Baird 611

Atrial Natriuretic Peptide Gene Expression and Its Secretion by Pneumocytes Derived from Neonatal Rat Lungs *Hiroaki Matsubara, Yasukiyo Mori, Yukihisa Umeda, Shinzo Oikawa, Hiroshi Nakazato, and Mitsuo Inada* 619

Subcellular Distribution of Protein Kinase C in Rat Adrenal Glomerulosa Cells *Anna Faragó, János Seprődi, and András Spät* 628

Fibroblast Growth Factor Regulates the Expression of Luteinizing Hormone Receptors in Cultured Rat Granulosa Cells *Florence Oury and Jean-Marie Darbon* 634

A23187 and Protein Kinase C Activators Stimulate Phosphatidylinositol Metabolism and Prostaglandin Synthesis in a Human Lung Cancer Cell Line *Bruce E. Rapuano and Richard S. Bockman* 644

Modulation of Glycogen Synthase Kinase Activity of Skeletal and Smooth Muscle Casein Kinase I by Spermine *Mohammed G. Hegazy, Keith K. Schlender, Erwin M. Reimann, and Joseph DiSalvo* 653

Cloning and Characterization of a cDNA Encoding Bovine Endonexin (Chromobindin 4) *Helen C. Hamman, Lynn C. Gaffey, Kevin R. Lynch, and Carl E. Creutz* 660

Induction of Follicle Stimulating Hormone Receptor by Erythroid Differentiation Factor on Rat Granulosa Cell *Yoshihisa Hasegawa, Kaoru Miyamoto, Yumiko Abe, Takanori Nakamura, Hiromu Sugino, Yuzuru Eto, Hiroshiro Shibai, and Masao Igarashi* 668

A Histone 1-like Antigen Is a Component of the Nuclear Envelope *Jaya T. Venkatraman, J. Gohill, Marvin J. Fritzler, and Yvonne A. Lefebvre* 675

Four Species of cDNAs for Cytochrome P450 Isozymes Immunorelated to P450C-M/F Encode for Members of P450IID Subfamily, Increasing the Number of Members within the Subfamily *Nobuhiro Ishida, Yasunori Tawaragi, Chikako Inuzuka, Osamu Sugita, Ichiro Kubota, Hiroshi Nakazato, Teruhisa Noguchi, and Shigeru Sassa* 681

Inhibitors of Sterol Synthesis. Exogenous Oleate Reduces the Inhibitory Effect of 5α-Cholest-8(14)-en-3β-ol-15-one on the Growth of CHO-K1 Cells *Frederick D. Pinkerton, Nanda Duhé Kirkpatrick, and George J. Schroepfer, Jr.* 689

Mutation Affecting Peptide Bond Formation in Nikkomycin Biosynthesis *P. Engel and A. H. J. Ullah* 695

Mapping of a DNA Sequence that Down-Regulates the Expression of an Interferon-Induced Gene *Hiroaki Akai and Andrew C. Larner* 701

Effect of Diabetes on Guanine Nucleotide Exchange Factor Activity in Skeletal Muscle and Heart *S. R. Kimball and L. S. Jefferson* 706

Retinoic Acid Rapidly Induces Lung Cellular Retinol-Binding Protein mRNA Levels in Retinol Deficient Rats *Riaz ul Haq and Frank Chytil* 712

Diacylglycerol Provides Arachidonic Acid for Lipoxygenase Products that Mediate Angiotensin II-Induced Aldosterone Synthesis *Rama Natarajan, Naftali Stern, and Jerry Nadler* 717

Cloning of a Complete cDNA Encoding Human Aromatase: Immunochemical Identification and Sequence Analysis *Nobuhiro Harada* 725

Control of Misincorporation of *de Novo* Synthesized Norleucine into Recombinant Interleukin-2 in *Escherichia coli* *Larry B. Tsai, Hsieng S. Lu, William C. Kenney, Craig C. Curless, Michael L. Klein, Por-Hsiung Lai, Dennis M. Fenton, Bruce W. Altrock, and Michael B. Mann* 733

The Primary Structure of the Lymphocyte Pore-Forming Protein Perforin: Partial Amino Acid Sequencing and Determination of Isoelectric Point *Pedro M. Persechini and John Ding-E Young* 740

Calcium-Stimulated ATPase Activity in Plasma Membrane Vesicles from Pancreatic Acinar Cells *Duane L. Ochs, Denise M. Belanger, and Joan Kalnitsky-Aliff* 746

Infrared Spectroscopy of a Single Cell: The Human Erythrocyte *Aichun Dong, Robert G. Messerschmidt, John A. Reffner, and Winslow S. Caughey* 752

Immunological Detection of G-Protein α-Subunits in *Dictyostelium discoideum*
B. Ewa Snaar-Jagalska, Fanja Kesbeke, Maureen Pupillo, and Peter J. M. Van Haastert 757

Variant Apolipoprotein AI as a Major Constituent of a Human Hereditary Amyloid
William C. Nichols, Francis E. Dwulet, Juris Liepnieks, and Merrill D. Benson 762

ATP-Sensitive K^+ Channels May Control Glucose-Induced Electrical Activity in Pancreatic B-Cells *Jean-Claude Henquin* 769

Prolactin Differentially Affects Bacterial Toxin-Induced ADP-Ribosylation of Nb_2 Lymphoma Cell Membrane Proteins *Ronnie J. Barkey, Juan C. Calvo, and Maria L. Dufau* 776

Recognition of Insulin-like Growth Factor (IGF) Serum Binding Proteins by an Antibody Raised against a Specific IGF-Inhibitor *Guck T. Ooi and Adrian C. Herington* 783

A Simple Formula for Solvent-Accessible Areas of Amino Acid Side-Chains
Richard Cowan 792

Ouabain Sensitivity of the α 3 Isozyme of Rat Na,K-ATPase
Osamu Urayama and Kathleen J. Sweadner 796

Differential Sensitivity of Neural and Non-neural Protein Kinase Isozymes to Cyclic AMP
Deepak Bhatnagar, Andrew A. Burton, and Robert Roskoski, Jr. 801

Identification of Unusual Replacement of Methionine by Norleucine in Recombinant Interleukin-2 Produced by *Escherichia coli* *Hsieng S. Lu, Larry B. Tsai, William C. Kenney, and Por-Hsiung Lai* 807

Structure of the Mouse C-Reactive Protein Gene *Shuji Ohnishi, Shuichiro Maeda, Seiji Nishiguchi, Tatsuyoshi Arao, and Kazunori Shimada* 814

Interrelation of Platelet Aggregation, Release Reaction, and Thromboxane A_2 Production
Carlo L. Balduini, Giampiera Bertolino, Patrizia Noris, Fabiola Sinigaglia, Antonella Bisio, and Mauro Torti 823

Post-transcriptional Control of IL-1 Gene Expression in the Acute Monocytic Leukemia Line THP-1 *Martin Turner, David Chantry, and Marc Feldmann* 830

Age and Sex Related Changes of Plasma Membrane Fluidity in Isolated Rat Hepatocytes
Antonio Benedetti, Gianna Ferretti, Giovanna Curatola, Anne Marie Jézéquel, and Francesco Orlandi 840

Platelet-Derived Growth Factor (PDGF)-Induced Phospholipase C-Mediated Hydrolysis of Phosphoinositides in Vascular Smooth Muscle Cells: Different Sensitivity of PDGF- and Angiotensin II-Induced Phospholipase C Reactions to Protein Kinase C-Activating Phorbol Esters *Yasuhiro Kawahara, Ken-ichi Kariya, Shun-ichi Araki, Hisashi Fukuzaki, and Yoshimi Takai* 846

Tosyl-lysyl Chloromethylketone Detects Conformational Changes in the Catalytic Unit of Adenylate Cyclase Induced by Receptor and G-Protein Stimulation
Lindsey Needham and Miles D. Houslay 855

Synthetic Peptides Based on the Calmodulin-Binding Domain of Myosin Light Chain Kinase Inhibit Activation of Other Calmodulin-Dependent Enzymes
Donald K. Blumenthal, Harry Charbonneau, Arthur M. Edelman, Thomas R. Hinds, Gary B. Rosenberg, Daniel R. Storm, Frank F. Vincenzi, Joseph A. Beavo, and Edwin G. Krebs 860

Rat Liver Carboxylesterase: cDNA Cloning, Sequencing, and Evidence for a Multigene Family *Rochelle M. Long, Hiroko Satoh, Brian M. Martin, Shioko Kimura, Frank J. Gonzalez, and Lance R. Phol* 866

Molecular Cloning and Nucleotide Sequence of Murine 2,3-Bisphosphoglycerate Mutase cDNA *P. Le Boulch, V. Joulin, M-C. Garel, J. Rosa, and M. Cohen-Solal* 874

Muramyl Dipeptide-Elicited Production of PGD_2 from Astrocytes in Culture
Kozo Yamamoto, Toshiaki Miwa, Ryuji Ueno, and Osamu Hayaishi 882

Small Molecular Weight GTP-Binding Proteins in Human Erythrocyte Ghosts
Kazuto Ikeda, Akira Kikuchi, and Yoshimi Takai 889

Processing of the Oxytocin Precursor: Isolation of an Exopeptidase from Neurosecretory Granules of Bovine Pituitaries *Ursel Nörenberg and Dietmar Richter* 898

Inhibition of α_2-Adrenergic Receptor-Mediated Cyclic GMP Formation by a Phorbol Ester, a Protein Kinase C Activator *Rama K. Jaiswal and Rameshwar K. Sharma* 905

Facile Analysis and Purification of Deblocked N-Terminal Pyroglutamyl Peptides with a Strong Cation-Exchange Sulfoethyl Aspartamide Column *Dan L. Crimmins, Dave W. McCourt, and Benjamin D. Schwartz* 910

Sucrose Feeding Prevents Changes in Myosin Isoenzymes and Sarcoplasmic Reticulum Ca^{2+}-Pump ATPase in Pressure-Loaded Rat Heart *Heinz Rupp, Vijayan Elimban, and Naranjan S. Dhalla* 917

Differential Effects of Norepinephrine and Phorbol Ester on α-1 Adrenergic Receptor Number and Surface-Accessibility in DDT_1 MF-2 Cells *Wilson S. Colucci, Marjorie Akers, and Gwendolyn M. Wise* 924

Isolation and Characterization of Human Platelet Glycoprotein IX *Gerald J. Roth, Juris Ozols, Diane J. Nugent, and Stuart A. Williams* 931

Changes in Intracellular Redox and Energy Status during Induced Transplasma Membrane Electron Transport in *Cuscuta* Protoplasts *Shalini Revis and Prakash C. Misra* 940

Selective Inhibition of Free Arachidonic Acid Production in Activated Alveolar Macrophages by Calmodulin Antagonists *Yasuhito Nakagawa and Keizo Waku* 947

Identification of GTP-Binding Proteins in the Plasma Membrane of Higher Plants *W. Blum, K.-D. Hinsch, G. Schultz, and E. W. Weiler* 954

Absorption of Eicosapentaenoic Acid and Docosahexaenoic Acid from Fish Oil Triacylglycerols or Fish Oil Ethyl Esters Coingested with a High-Fat Meal *Larry D. Lawson and Bronwyn G. Hughes* 960

Isolation and Characterization of a Bovine Liver Tryosine-O-Sulfate-Binding Protein: A Putative Receptor Molecule for Tyrosine-Sulfated Proteins? *Ming-Cheh Liu, Masahito Suiko, and Xibai Tang* 964

Human Erythrocytes Cross-Linked with Glutaraldehyde: General Properties and Significance as a Blood Substitute *A. Bellelli, P. L. Benedetti, M. Coletta, R. Ippoliti, and M. Brunori* 970

Increase in the ADP/ATP Exchange in Rat Liver Mitochondria Irradiated *in Vitro* by Helium–Neon Laser *Salvatore Passarella, Angela Ostuni, Anna Atlante, and Ernesto Quagliariello* 978

Cloning and Sequencing of a cDNA for Human Mitochondrial Ubiquinone-Binding Protein of Complex III *Hiroshi Suzuki, Yoshitaka Hosokawa, Haruo Toda, Morimitsu Nishikimi, and Takayuki Ozawa* 987

Induction of Poly(ADP-Ribose) Polymerase Gene Expression in Lectin-Stimulated Human T Lymphocytes Is Dependent on Protein Synthesis *Marta Menegazzi, Franca Gelosa, Marina Tommasi, Kazuhiko Uchida, Masanao Miwa, Takashi Sugimura, and Hisanori Suzuki* 995

Atrial Natriuretic Peptide Receptors Are Present in Brown Adipose Tissue *H. Okamura, P. A. Kelly, J. G. Chabot, G. Morel, M. Belles-Isles, and S. Heisler* 1000

Additive Effects of IL-1 and TNF on Induction of Prostacyclin Synthesis in Human Vascular Endothelial Cells *Hirahito Endo, Tohru Akahoshi, and Sadao Kashiwazaki* 1007

GM2-Gangliosidosis B1 Variant: A Wide Geographic and Ethnic Distribution of the Specific β-Hexosaminidase α Chain Mutation Originally Identified in a Puerto Rican Patient *Akemi Tanaka, Kousaku Ohno, and Kunihiko Suzuki* 1015

Platelet Aggregation Is Inhibited by Long Chain Acyl-CoA *I. Lascu, B. Edwards, M. P. Cucuianu, and D. W. Deamer* 1020

Characterization of Receptor for Granulocyte Colony-Stimulating Factor on Human Circulating Neutrophils *H. Uzumaki, T. Okabe, N. Sasaki, K. Hagiwara, F. Takaku, and S. Itoh* 1026

Photocrosslinking of Calmodulin and/or Actin to Chicken Gizzard Caldesmon *Chih-Lueh Albert Wang* 1033

Isolation of a cDNA Clone for the α Subunit of the Human GABA-A Receptor *Kennon M. Garrett, Ronald S. Duman, Naoaki Saito, Arthur J. Blume, Michael P. Vitek, and John F. Tallman* 1039

Potent and Selective Activity of a New Carbocyclic Nucleoside Analog (Carbovir: NSC 614846) against Human Immunodeficiency Virus *in Vitro* *Robert Vince, Mei Hua, Jay Brownell, Susan Daluge, Fangchen Lee, William M. Shannon, George C. Lavelle, Jeanine Qualls, Owen S. Weislow, Rebecca Kiser, Peter G. Canonico, Robert H. Schultz, V. L. Narayanan, Joseph G. Mayo, Robert H. Shoemaker, and Michael R. Boyd* 1046

Human Placental Endonuclease Cleaves Holliday Junctions *R. Jeyaseelan and G. Shanmugam* 1054

ERRATUM

Volume 154, Number 3, August 15, 1988: Ilona Gruda, Eric Gauthier, Svetlana Elberg, Janina Brajtburg, and Gerald Medoff, "Effects of the Detergent Sucrose Monolaurate on Binding of Amphotericin B to Sterols and Its Toxicity for Cells," pp. 954–958 1061

Volume 156, Number 3, November 15, 1988

AUTHOR INDEX, Volume 156, Number 3, November 15, 1988 iii

Evidence of Gene Amplification in Tunicamycin-Resistant Chinese Hamster Ovary Cells *Jane R. Scocca, Karin O. Hartog, and Sharon S. Krag* 1063

Effects of Atrial Natriuretic Factor on Urinary Concentration of Catecholamines and Renin Secretion in Dogs *J. R. Sowers, P. K. Mohanty, M. D. Thames, D. S. Goldstein, and S. Atlas* 1070

Defective Formation of Inositol 1,4,5-Triphosphate in Bradykinin-Stimulated Fibroblasts from Progressive Systemic Sclerotic Patients *Mariko Seishima, Yukihiro Yada, Seiji Nagao, Shunji Mori, and Yoshinori Nozawa* 1077

NAD(P)H-Dependent Reduction of 12-Ketoeicosatetraenoic Acid to 12(R)- and 12(S)-Hydroxyeicosatetraenoic Acid by Rat Liver Microsomes *Jean-Pierre Falgueyret, Yves Leblanc, Joshua Rokach, and Denis Riendeau* 1083

Phosphatidylethanol Formation in Human Platelets: Evidence for Thrombin-Induced Activation of Phospholipase D *Raphael Rubin* 1090

The Heat Shock Response of *Neurospora crassa:* Stress-Induced Thermotolerance in Relation to Peroxidase and Superoxide Dismutase Levels *M. Kapoor and G. M. Sveenivasan* 1097

Expression and Characterization of Recombinant Human Angiotensinogen in a Heterologous Eukaryotic Cell Line *Lei Wei, Isabelle Gaillard, Pierre Corvol, and Eric Clauser* 1103

Light-Induced Phosphoinositide Degradation and Light-Induced Structural Alterations in the Rat Retina Are Enhanced after Chronic Lithium Treatment *J. Pfeilschifter, Ch. Remé, and C. Dietrich* 1111

Reaction Products of a New Anticancer Agent, Pt(IV)(Cyclohexyldiamine)Cl_4, with Guanosine and 9-Methylguanine: First Crystal Structures of Pt(Cyclohexyldiamine) Complexes with a Nucleobase and a Nucleoside *Hok-Kin Choi, Aristidis Terzis, Raymond C. Stevens, Robert Bau, Rudiger Haugwitz, V. L. Narayanan, and Mary Wolpert-DeFilippes* 1120

Octahedral Complexes of Anticancer Pt(IV)(Cyclohexyldiamine) Agents with 9-Methylguanine *Hok-Kin Choi, Sharon Kuei-Shang Huang, and Robert Bau* 1125

Glutamate Synthase in *Medicago sativa* L. Occurrence and Properties of Fd-Dependent Enzyme in Plant Cell Fraction during Root Nodule Development *Akira Suzuki, Elisa Carrayol, Claire Zehnacker, and Marie-Esther Deroche* 1130

Enhancement of Intracellular Calcium Concentration by Extracellular ATP and UPT in Madin Darby Canine Kidney Cells *M. Paulmichl and F. Lang* 1139

Inhibition of Duck Hepatitis B Virus Replication by Purine 2′,3′-Dideoxynucleosides *Satoru Suzuki, Bonita Lee, Weixing Luo, Dorothy Tovell, Morris J. Robins, and David L. J. Tyrrell* 1144

Spatial Distribution and Temporal Change of Cytoplasmic Free Calcium in Human Platelets *Yasuhiro Tsunoda, Kazuhiko Matsuno, and Yutaka Tashiro* 1152

ADP-Ribosylation of Bovine S-Antigen by Cholera Toxin
Naoka Komori, Maureen A. Rider, Dolores J. Takemoto, Hitoshi Shichi, and Hiroyuki Matsumoto 1160

Expression of the Rat Growth Hormone Gene in Transfected CV-1 Cells
David S. Howland, W. C. Hymer, and William D. Taylor 1166

Superoxide Anion Measurement by Sulfonated Phenyl Isothiocyanate Cytochrome C
Françoise Morel, Anne-Christine Dianoux, and Pierre V. Vignais 1175

Structure-Activity Relationships of Endothelin: Importance of the C-Terminal Moiety
Sadao Kimura, Yoshitoshi Kasuya, Tatsuya Sawamura, Osamu Shinmi, Yoshiki Sugita, Masashi Yanagisawa, Katsutoshi Goto, and Tomoh Masaki 1182

Isolation and NH_2-Terminal Amino Acid Sequences of Rat Serum Carrier Proteins for Insulin-like Growth Factors *Jürgen Zapf, Walter Born, Jui-Yoa Chang, Peter James, E. Rudolf Froesch, and Jan A. Fischer with the technical assistance of Christina Hauri, Margaretha Waldvogel, and Else-Marie Pedersen* 1187

Role of Calcium in the Potentiating Effect of Phorbol Ester on KCl-Induced Vasocontraction *Ichiro Wakabayashi, Eizo Kakishita, Katsuhiko Hatake, Shigeru Hishida, and Kiyoyasu Nagai* 1195

Carboxyl Residue(s) at the Ligand-Binding Site of Rat Muscarinic Receptors
Ronit Galron and Mordechai Sokolovsky 1203

Interleukin-1 α and β Induce Interleukin-1 β Gene Expression in Human Dermal Fibroblasts *Alain Mauviel, Nathalie Temime, Dominique Charron, Gérard Loyau, and Jean-Pierre Pujol* 1209

Partial Covalent Labeling with Pyridoxal 5′-Phosphate Induces Bis(sulfosuccinimidyl)suberate Crosslinking of Band 3 Protein Tetramers in Intact Human Red Blood Cells
James M. Salhany and Renee L. Sloan 1215

Comparison of Two Independent cDNA Clones Reported to Encode β1,4 Galactosyltransferase
Linda C. Lopez and Barry D. Shur 1223

Biochemical and Immunological Similarity of Soluble Angiotensin II-Binding Proteins in Different Organs *Elizabeth Rosenberg, Carlo Russo, M. A. Ravi Kiron, and Richard L. Soffer* 1230

Bioactivity of Synthetic Human Pancreastatin on Exocrine Pancreas
Akihiro Funakoshi, Kyoko Miyasaka, Rieko Nakamura, Kenichi Kitani, Susumu Funakoshi, Hirokazu Tamamura, Nobutaka Fujii, and Haruaki Yajima 1237

Accumulation of 1-Methyl-4 Phenylpyridinium (MPP^+) into Bovine Chromaffin Granules Results in a Large Restriction of Its Molecular Motion: A ^{13}C and ^{31}P NMR Study
A. J. Daniels, J. F. Reinhard, Jr., and G. R. Painter 1243

The Antiproliferative Effects of Staurosporine Are Not Exclusively Mediated by Inhibition of Protein Kinase C *Charles D. Smith, J. Fraser Glickman, and Kwen-Jen Chang* 1250

Phorbol Ester Treatment Inhibits Thrombin but Not Stable GTP Analog-Induced Platelet Granule Secretion despite Inhibition of Phosphatidate Formation with Both Agonists
Sushila Krishnamurthi and Vijay V. Kakkar 1257

Deletion of a Homeobox Gene in Myeloid Leukemias with a Deletion in Chromosome 2
Cila Blatt and Leo Sachs 1265

Evidence for Impaired Subunit Interaction in Chemically Deglycosylated Human Choriogonadotropin *Wolfgang E. Merz* 1271

Direct Coupling of a G-Protein to Dihydropyridine Binding Sites
Stefania Bergamaschi, Stefano Govoni, Paola Cominetti, Marco Parenti, and Marco Trabucchi 1279

Induction of an *Alu*-Sequence Containing Transcript by Insulin in Human Hepatoma Cells
Lee-Ming Chuang, Boniface J. Lin, Sheng-Chung Lee, Tong-Yuan Tai, and Ding-Shinn Chen 1287

Platelet Activating Factor Is a Potent Stimulant of the Production of Active Oxygen Species by Human Monocyte-Derived Macrophages
Mustapha Rouis, Fabienne Nigon, and M. John Chapman 1293

The Effect of Doxorubicin on the Transport of Pyruvate in Rat-Heart Mitochondria
Giuseppe Paradies and Francesca Maria Ruggiero 1302

Synthesis of Prostaglandins and Eicosanoids by the Mast Cell Secretory Granule
Stephen P. Chock and Elsa A. Schmauder-Chock 1308

Forskolin and Prostacyclin Inhibit Fluoride Induced Platelet Activation and Protein Kinase C Dependent Responses *M. Gabriella Doni, Renzo Deana, Stefano Bertoncello, Franco Zoccarato, and Adolfo Alexandre* 1316

Targets for Calcium Channel Blockers in Mammalian Skeletal Muscle and Their Respective Functions in Excitation–Contraction Coupling *Georges Romey, Luis Garcia, François Rieger, and Michel Lazdunski* 1324

Phosphorylation of Calmodulin on Threonine Residue(s) by Cytosol Prepared from the Adrenal Cortex *Mitsumasa Kubo and Charles A. Strott* 1333

Monokine-Induced Gene Expression of a Human Endothelial Cell-Derived Neutrophil Chemotactic Factor *R. M. Strieter, S. L. Kunkel, H. J. Showell, and R. M. Marks* 1340

Epidermal Growth Factor and Insulin-like Growth Factor-I Stimulate the Hydrolysis of the Insulin-Sensitive Phosphatidylinositol-Glycan in BC3H-1 Myocytes
Robert V. Farese, Govindan P. Nair, Mary L. Standaert, and Denise R. Cooper 1346

Detection of an ATPase Activity in Rat Liver Peroxisomes
Ruth del Valle, Ubaldo Soto, Cecilia Necochea, and Federico Leighton 1353

Early and Late Heat-Induced Proteins during *Leishmania mexicana* Transformation
Antonio Alcina and Manuel Fresno 1360

Progesterone-Dependent Binding of a *trans*-Acting Factor to the Uteroglobin Promoter
V. Rider and D. W. Bullock 1368

Temperature-Dependent Inhibition of fMet-Leu-Phe-Stimulated Superoxide Generation by C-I and H-7 in Human Neutrophils *Jayasree Nath and Annette Powledge* 1376

A Novel Bombesin Receptor Antagonist Inhibits Autocrine Signals in a Small Cell Lung Carcinoma Cell Line *Jane B. Trepel, James D. Moyer, Frank Cuttitta, Harold Frucht, David H. Coy, Ronald B. Natale, James L. Mulshine, Robert T. Jensen, and Edward A. Sausville* 1383

Nucleolin (C23), a Physiological Substrate for Casein Kinase II
Helge R. Schneider and Olaf-Georg Issinger 1390

Immunoprecipitation of the *in Vitro* Translation Product of Rabbit Muscle Protein Phosphatase C-I MRNA *Shi Yan Zheng and Ernest Y. C. Lee* 1398

Cloning, Nucleotide Sequence, and Molecular Evolution of a Rabbit Processed Metallothionein MT-2 Pseudogene *You C. Tam, Manuel Hassan, Arvind Chopra, and Jean-Paul Thirion* 1403

The Effect of Fetal Calf Serum on Intracellular Calcium in GH_3 Cells
I. J. Wrench, T. J. Brown, B. L. Brown, and P. R. M. Dobson 1411

ERRATA

Volume 154, Number 3, August 15, 1988: G. A. McClarty, P. N. Tonin, P. R. Scrinivasan, and J. A. Wright, "Relationships between Reversion of Hydrooxyurea Resistance in Hamster Cells and the Co-Amplification of Ribonucleotide Reductase M2 Component, Ornithine Decarboxylase and P5-8 Genes," pp. 975–981 1419

Volume 155, Number 1, August 31, 1988: Kan Tanaka, Hiuga Saito, Motoo Arai, Sawao Murao, and Hideo Takahashi, "Cloning and Expression of the Metalloproteinase Inhibitor (S-MPI) Gene from *Streptomyces nigrescens*," pp. 487–492 1419

Volume 155, Number 3, September 30, 1988: Masanori Tsukuda, Yoshinori Asaoka, Kazuo Sekiguchi, Ushio Kikkawa, and Yasutomi Nishizuka, "Properties of Protein Kinase C Subspecies in Human Platelets," pp. 1387–1395 1420

Volume 157, Number 1, November 30, 1988

AUTHOR INDEX, Volume 157, Number 1, November 30, 1988 iii

Protein Kinase C Activities and Bindings of a Phorbol Ester Tumor Promoter in 41 Cell Lines *Kazuhiro Chida, Noriko Kato, Shuhei Yamada, and Toshio Kuroki* 1

Inhibition of Phorbol Ester-Caused Induction of Ornithine Decarboxylase and Tumor Promotion in Mouse Skin by Staurosporine, a Potent Inhibitor of Protein Kinase C *Shuhei Yamada, Kenji Hirota, Kazuhiro Chida, and Toshio Kuroki* 9

A New Method for High Yield Purification of Type β Transforming Growth Factor from Human Platelets *A. J. M. van den Eijnden-van Raaij, I. Koornneef, and E. J. J. van Zoelen* 16

Amino Acid Sequence of the Signal Peptide of Mitochondrial Nicotinamide Nucleotide Transhydrogenase as Determined from the Sequence of Its Messenger RNA *Mutsuo Yamaguchi, Youssef Hatefi, Kathleen Trach, and James A. Hoch* 24

Characterization of the Liver Mitochondrial Cytochrome P450 Catalyzing the 26-Hydroxylation of 5β-Cholestane-3α, 7α, 12α-triol *Helena Dahlbäck* 30

Synthesis of Phospholipid Transfer Proteins from Maize Seedlings *C. Vergnolle, V. Arondel, F. Tchang, M. Grosbois, F. Guerbette, A. Jolliot, and J. C. Kader* 37

Evidence for an Endogenous Factor Involved in Maintenance of Pirenzepine High-Affinity Binding in Rat Brain Stem *Chris J. van Koppen and Mordechai Sokolovsky* 42

Activin-A: A Modulator of Multiple Types of Anterior Pituitary Cells *Masafumi Kitaoka, Itaru Kojima, and Etsuro Ogata* 48

Centrilobular Expression of Ethanol-Inducible Cytochrome P450 (IIE1) in Rat Liver *Magnus Ingelman-Sundberg, Inger Johansson, Kai E. Penttilä, Hans Glaumann, and Kai O. Lindros* 55

Enzymatic Sulfation of Salivary Mucins: Structural Features of 35 S-Labeled Oligosaccharides *B. L. Slomiany, J. Piotrowski, H. Nishikawa, and A. Slomiany* 61

Putative Termination Sites for rDNA Transcription in Rice *K. Nandabalan and J. D. Padayatty* 68

Brain Microsomal Oxidation of Δ^8- and Δ^9-Tetrahydrocannabinol *Kazuhito Watanabe, Tatsuro Tanaka, Ikuo Yamamoto, and Hidetoshi Yoshimura* 75

[19-^{14}C] Androstenedione: A New Substrate for Assaying Aromatase and Studying Its Reaction Mechanism *Douglas F. Covey, Patrick C. McMullan, Linda L. Wixler, and Mayo Cabell* 81

Nitric Oxide: A Cytotoxic Activated Macrophage Effector Molecule *John B. Hibbs, Jr., Read R. Taintor, Zdenek Vavrin, and Elliot M. Rachlin* 87

Increased [^{3}H]-Thymidine Incorporation into DNA of Organ-Cultured Adrenal Explants from Rats Injected with Corticotropin and/or Cysteamine *E. Sewerynek, M. Szkudliński, A. Lewiński, and J. Kunert-Radek* 95

Modeling of the Homoeo Domain Suggests Similar Structure to Repressors *Panagiotis A. Tsonis, Vasili Carperos, and Teruna Shiahaan* 100

Reduction of Nitrite to Nitric Oxide by Enteric Bacteria *Xiao-bing Ji and Thomas C. Hollocher* 106

The Cellular Internalization of Recombinant Interferon-γ Differs from That of Natural Interferon-γ *Vladimir M. Kushnaryov, Hector S. MacDonald, J. James Sedmak, and Sidney E. Grossberg* 109

Vitronectin Is a Substrate for Transglutaminases *David C. Sane, Tammy L. Moser, Anne M. M. Pippen, Charles J. Parker, Komandoor E. Achyuthan, and Charles S. Greenberg* 115

Transient Activation of c-*myc* Protooncogene Expression in Leydig Cells by Human Chorionic Gonadotropin *T. Lin, J. Blaisdell, K. W. Barbour, and E. A. Thompson* 121

DNA Sequence Dependence of ATP Hydrolysis by RecA Protein *Mohan Amaratunga and Albert S. Benight* 127

2,3-Bisphosphoglycerate Inhibits Hemoglobin Synthesis and Phosphorylation of Initiation Factor 2 by Casein Kinase II in Reticulocyte Lysates *Mary I. Gonzatti and Jolinda A. Traugh* 134

Conformational States of the Insulin Receptor
Esther Schenker and Ronald A. Kohanski 140

Changes in the Levels of Superoxide Anion Radical and Superoxide Dismutase during the Estrous Cycle of *Rattus norvegicus* and Induction of Superoxide Dismutase in Rat Ovary by Lutropin *Malini Laloraya, Pradeep kumar G, and Manmohan M. Laloraya* 146

A Simple and Rapid Method for the Preparation of Homologous DNA Oligonucleotide Hybridization Probes from Heterologous Gene Sequences and Probes
E. Stuart Maxwell and Kevin D. Sarge 154

Role of Oxygen during Horseradish Peroxidase Turnover and Inactivation
Xiaoyan Ma and Steven E. Rokita 160

Identification of the Major Phosphoprotein Secreted by Many Rodent Cell Lines as 2AR/Osteopontin: Enhanced Expression in H-*ras*-Transformed 3T3 Cells
Ann Marie Craig, Mohamed Nemir, Barid B. Mukherjee, Ann F. Chambers, and David T. Denhardt 166

Triticone A: A Novel Bioactive Lactam with Potential as a Molecular Probe
Doug Kenfield, Scott Strobel, Fumio Sugawara, Deborah Berglund, and Gary Strobel 174

Effect of Genistein on Topoisomerase Activity and on the Growth of [VAL 12]Ha-*ras*-Transformed NIH 3T3 Cells *Akira Okura, Hiroharu Arakawa, Hirofumi Oka, Tomoko Yoshinari, and Yoshiaki Monden* 183

Detection of Carbon–Phosphorus Lyase Activity in Cell-Free Extracts of *Enterobacter aerogenes* *Kousaku Murata, Noriko Higaki, and Akira Kimura* 190

Classification of the Insulin-like Growth Factor Binding Proteins into Three Distinct Categories According to Their Binding Specificities *Briony Forbes, Laszlo Szabo, Robert C. Baxter, F. John Ballard, and John C. Wallace* 196

cDNA Cloning and Sequence Determination of Pig Gastric ($H^+ + K^+$)-ATPase
Masatomo Maeda, Jun Ishizaki, and Masamitsu Futai 203

Identification of [Hydroxyproline^3]-bradykinin Released from Human Plasma and Plasma Protein Cohn's Fraction IV-4 by Trypsin *Manabu Sasaguri, Masaharu Ikeda, Munehito Ideishi, and Kikuo Arakawa* 210

Human Glucosamine-6-sulfatase cDNA Reveals Homology with Steroid Sulfatase
Daniel A. Robertson, Craig Freeman, Paul V. Nelson, C. Phillip Morris, and John J. Hopwood 218

Observation of Fatigue Unrelated to Gross Energy Reserve of Skeletal Muscle during Tetanic Contraction—an Application of ^{31}P-MRS
S. Takata, H. Takai, T. Ikata, and I. Miura 225

Rapid Turnover of Sphingosine Synthesized *de Novo* from [^{14}C]Serine by Chinese Hamster Ovary Cells *Kimberly A. Medlock and Alfred H. Merrill, Jr.* 232

Cloning, Sequencing, and Expression of cDNA for Human β-Galactosidase
Akihiro Oshima, Akihiko Tsuji, Yoshiro Nagao, Hitoshi Sakuraba, and Yoshiyuki Suzuki 238

Nitrous Oxide Exposure Reduces Hepatic C_1-Tetrahydrofolate Synthase Expression in Rats
Charles K. Barlowe and Dean R. Appling 245

Experimental Osteoarthritic Articular Cartilage Is Enriched in Guanidine-Soluble Type VI Collagen *Cahir A. McDevitt, Julie A. Pahl, Shirley Ayad, Raymond R. Miller, Masaaki Uratsuji, and Jack T. Andrish* 250

Complementary DNA Cloning and Sequencing of Rat Ovarian Basic Fibroblast Growth Factor and Tissue Distribution Study of Its mRNA
Shunichi Shimasaki, Naoya Emoto, Ann Koba, Maluz Mercado, Futoshi Shibata, Karen Cooksey, Andrew Baird, and Nicholas Ling 256

Modulation of Polyamine Biosynthesis and Transport by Oncogene Transfection
Barbara K. Chang, Paul R. Libby, Raymond J. Bergeron, and Carl W. Porter 264

Role of Interleukin-6 in Regulating Synthesis of C-Reactive Protein and Serum Amyloid A in Human Hepatoma Cells Lines
Mahrukh K. Ganapathi, Lester T. May, Debra Schultz, Anne Brabenec, Joel Weinstein, Pravinkumar B. Sehgal, and Irving Kushner 271

Human Progesterone A-Receptors Can Be Synthesized Intracellularly and Are Biologically Functional *Nancy L. Krett, Lisa L. Wei, Mary D. Francis, Steven K. Nordeen, David F. Gordon, William M. Wood, and Kathryn B. Horwitz* 278

Isolation and Characterization of Monoclonal Antibodies against Ribonuclease Inhibitor
Mark Feldman, D. Stave Kohtz, and David L. Kleinberg 286

Activation of a New Protein Kinase by Okadaic Acid Class Tumor Promoters
Toshihiro Sassa, Masami Suganuma, Hiroko Suguri, Shigeru Yoshizawa, Werner W. Richter, Mitsuru Hirota, and Hirota Fujiki 295

Inhibitory Effect of Transforming Growth Factor-β on Epidermal Growth Factor-Induced Proliferation of Cultured Rat Aortic Smooth Muscle Cells
Yasuyoshi Ouchi, Jiro Hirosumi, Masae Watanabe, Akinori Hattori, Tetsuro Nakamura, and Hajime Orimo 301

Characterization of Specific Receptors for Atrial Natriuretic Factor on Cultured Bovine Brain Capillary Endothelial Cells *Kevin R. Smith, Akira Kato, and Ronald T. Borchardt* 308

Obesity as a Risk Factor for Drug-Induced Organ Injury. VI. Increased Hepatic P450 Concentration and Microsomal Ethanol Oxidizing Activity in the Obese Overfed Rat
Daniel E. Salazar, Christopher L. Sorge, and George B. Corcoran 315

Localization of the Insulin-Binding Site to the Cysteine-Rich Region of the Insulin Receptor α-Subunit *Cecil C. Yip, Helga Hsu, Rohit G. Patel, Dennis M. Hawley, Betty A. Maddux, and Ira D. Goldfine* 321

Inhibition of Atrial Natriuretic Peptide Secretion by Forskolin in Noncontracting Cultured Atrial Myocytes *Hiroshi Iida and Ernest Page* 330

Independent Inhibition of DNA Synthesis by Protein Kinase C, Cyclic AMP, and Interferon α/β in Rabbit Aortic Smooth Muscle Cells
Yasuo Fukumoto, Yasuhiro Kawahara, Ken-ichi Kariya, Shun-ichi Araki, Hisashi Fukuzaki, and Yoshimi Takai 337

Cytoplasmic pH in the Action of Epidermal Growth Factor (EGF) in Cultured Porcine Thyroid Cells *Nobuyuki Takasu, Yoshitaka Nagasawa, Ichiro Komiya, Takashi Yamada, and Yoshifusa Shimizu* 346

Self-Assembly of Porphyrins on Nucleic Acid Templates
Esther J. Gibbs, Ignacio Tinoco, Jr., Marcos F. Maestre, Panayiotis A. Ellinas, and Robert F. Pasternack 350

Inhibitors of Sterol Synthesis: 14α-Ethyl-5α-cholest-7-ene-3β,15β-diol Induces Changes in the Sterol Composition and the Morphology of CHO-K1 Cells
Frederick D. Pinkerton, Akihiro Izumi, and George J. Schroepfer, Jr. 359

Characterization of a Recombinant Murine Interleukin-6: Assignment of Disulfide Bonds
Richard J. Simpson, Robert L. Moritz, Emiel Van Roost, and Jacques Van Snick 364

In Vivo [^{35}S]Methionine Interaction with Rat-Liver DNA and the Effect of Chemical Carcinogens *Darja Kanduc and Ernesto Quagliariello* 373

A Stably Tranfected c-*myc* Cat Hybrid Gene Is Not Regulated by Serum in NIH3T3 Cells
Michaela Götschl and Dirk Eick 379

Synthetic Ferrichrome Analogues with Growth Promotion Activity for *Arthrobacter flavescens* *A. Shanzer, J. Libman, R. Lazar, Y. Tor, and T. Emery* 389

CSF-1 and c-*fms* Gene Expression in Human Carcinoma Cell Lines
Junko Horiguchi, Matthew L. Sherman, Adam Sampson-Johannes, Barbara L. Weber, and Donald W. Kufe 395

Isolation and Identification of a High-Molecular-Weight Brain Natriuretic Peptide in Porcine Cardiac Atrium *Naoto Minamino, Kenji Kangawa, and Hisayuki Matsuo* 402

Cloning and Sequence Analysis of cDNA Encoding a Precursor for Porcine Brain Natriuretic Peptide *Keiji Maekawa, Tetsuji Sudoh, Mitsuru Furusawa, Naoto Minamino, Kenji Kangawa, Hiroaki Ohkubo, Shigetada Nakanishi, and Hisayuki Matsuo* 410

ERRATUM
Volume 155, Number 2, September 15, 1988: Erika L. F. Holzbaur and Ming Tien, "Structure and Regulation of a Lignin Peroxidase Gene from *Phanerochaete chrysoporium*," *pp. 626-633* 417

Volume 157, Number 2, December 15, 1988

AUTHOR INDEX, Volume 157, Number 2, December 15, 1988 iii
Enhancer of Human Polyoma JC Virus Contains Nuclear Factor I-Binding Sequences; Analysis Using Mouse Brain Nuclear Extracts *Taka-aki Tamura, Takafumi Inoue, Kyosuke Nagata, and Katsuhiko Mikoshiba* 419
In Situ Hybridization Patterns of Zebrafish Homeobox Genes Homologous to *Hox-2.1* and *En-2* of Mouse *Pål Rasmus Njølstad and Anders Fjose* 426
The Effects of SUN 1165, a Novel Sodium Channel Blocker, on Ischemia-Induced Mitochondrial Dysfunction and Leakage of Lysosomal Enzymes in Canine Hearts *Satoru Sugiyama, Yoshihiro Hanaki, Takuo Ogawa, Nobuyuki Hieda, Kazumi Taki, and Takayuki Ozawa* 433
Degradation of Aspartate Aminotransferase in Rat Liver Lysosomes *Atsushi Sato, K. M. Faisal Khan, Yasuo Natori, and Mitsuko Okada* 440
H_2O_2 Activates CD11b/CD18-Dependent Cell Adhesion *Göran Skoglund, Ian Cotgreave, Jorge Rincon, Manuel Patarroyo, and Magnus Ingelman-Sundberg* 443
Quantum Mechanical Modeling of Aspartic Proteinase Interactions: Difference in Binding of Diastereomeric Statine Models *Amiram Goldblum* 450
Molecular Cloning and Primary Structure of Human 15-Lipoxygenase *Elliott Sigal, Charles S. Craik, Ella Highland, Dorit Grunberger, Lawrence L. Costello, Richard A. F. Dixon, and Jay A. Nadel* 457
Transport and Utilization of Free Fatty Acids in *Triatoma infestans* *J. L. Soulages, O. J. Rimoldi, O. R. Peluffo, and R. R. Brenner* 465
Three Types of Amyloid Protein Precursor mRNA in Human Brain: Their Differential Expression in Alzheimer's Disease *Seigo Tanaka, Shigenobu Nakamura, Kunihiro Ueda, Masakuni Kameyama, Satoshi Shiojiri, Yasuyuki Takahashi, Nobuya Kitaguchi, and Hirataka Ito* 472
Properties of Human Kidney Heme Oxygenase: Inhibition by Synthetic Heme Analogs and Metalloporphyrins *Pavel Martasek, Karim Solangi, Alvin I. Goodman, Richard D. Levere, Richard J. Chernick, and Nader G. Abraham* 480
Phospholipase A_2 from Human Synovial Fluid: Purification and Structural Homology to the Placental Enzyme *Chun-Yen Lai and Kenji Wada* 488
Reduction of Enzyme Activity of Tyrosine Hydroxylase and Aromatic L-Amino Acid Decarboxylase in Clonal Pheochromocytoma PC12h Cells by Carcinogenic Heterocyclic Amines *Makoto Naoi, Tsutomu Takahashi, Hiroshi Ichinose, Keiji Wakabayashi, Takashi Sugimura, and Toshiharu Nagatsu* 494
Location and Methylation Pattern of a Nuclear Matrix Associated Region in the Human Proα2(I) Collagen Gene *G. C. Ellis, A. F. Grobler-Rabie, F. S. Hough, and A. J. Bester* 500
Heart Protein Kinase C Activity Increases during Progression of Disease in the Cardiomyopathic Hamster *Timothy C. Chambers and Gabriel Eilon* 507
Enhancement of 2- and 16α-Estradiol Hydroxylation in MCF-7 Human Breast Cancer Cells by 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin *J. F. Gierthy, D. W. Lincoln II, S. J. Kampcik, H. W. Dickerman, H. L. Bradlow, T. Niwa, and G. E. Swaneck* 515

Phorbol 12-Myristate 13-Acetate Inhibition of Leukotriene D_4-Induced Signal Transduction Was Rapidly Reversed by Staurosporine
James D. Winkler, Henry M. Sarau, James J. Foley, and Stanley T. Crooke 521

Lovastatin is Hypertriglyceridemic in Syrian Golden Hamsters
Dilip Amin, Susan Gustafson, and Mark H. Perrone 530

DNA-Stimulated Protein Phosphorylation in HeLa Whole Cell and Nuclear Extracts
Timothy H. Carter, Cynthia R. Kopman, and Calvin B. L. James 535

Preparation and Structural Characterization of Nucleosomal Core Particles Lacking One H2A.H2B Dimer *Santiago de la Escalera, María Angela Nieto, and Enrique Palacián* 541

Messenger RNA Expressed in Mouse Teratocarcinoma Stem Cells and Down-Regulated by a Tumor-Promoting Phorbol Ester Codes for a Novel Transmembrane Protein
Junji Akagi, Hisayuki Nomiyama, Chiaki Setoyama, Kazunori Shimada, and Masanobu Akagi 548

Gene for Parathyroid Hormone-like Peptide Is on Rat Chromosone 2
G. N. Hendy, A. Y. Sakaguchi, T. Yasuda, D. K. Weber, L.-M. Wang, M. C. Yoshida, D. Banville, and D. Goltzman 558

Augmentation of DNA Synthesis in Guinea Pig Bone Marrow Cells by Platelet-Activating Factor (PAF) *Toshiyuki Kato, Ichiro Kudo, Hidetoshi Hayashi, Kikuo Onozaki, and Keizo Inoue* 563

A Computergraphic Determination of the Chemotactic Peptide Preferred Conformation
S. F. Semus, E. L. Becker, C. Toniolo, and R. J. Freer 569

Appearance of Hybridoma Growth Factor/Interleukin-6 in the Serum of Mice Bearing a Methylcholanthrene-Induced Sarcoma *Johan Gelin, Lyle L. Moldawer, Inga Englesse, Christina Lonnroth, Peter deMan, Stephen F. Lowry, Catharina Svanborg-Eden, and Kent G. Lundholm* 575

Age-Related Changes of Heat Shock Protein Gene Transcription in Human Peripheral Blood Mononuclear Cells *Yasuhiro Deguchi, Shigeru Negoro, and Susumu Kishimoto* 580

ACTH Stimulates Turnover of the Phosphatidylinositol-glycan
Eduardo N. Cozza, María del Carmen Vila, Celso E. Gomez-Sanchez, and Robert V. Farese 585

Effects of 8-Methoxypsoralen and Ultraviolet Light A on EGF Receptor (HER-1) Expression *X.-Y. Yang, Z. A. Ronai, R. M. Santella, and I. B. Weinstein* 590

Inhibitory Effect of Glycyrrhizin on Polypeptide Phosphorylation by Polypeptide-Dependent Protein Kinase (Kinase P) *in Vitro* *Kenzo Ohtsuki and Nakao Ishida* 597

Regulation of Proliferation by the Cholera Toxin B Subunit in FRTL-5 Cells May Involve a Mechanism Independent from the Modulation of Membrane Receptor Function
Toru Tetsumoto, Kaoru Takada, Nobuyuki Amino, and Kiyoshi Miyai 605

Protection from Heat-Induced Protein Migration and DNA Repair Inhibition by Cycloheximide *Elwood P. Armour, Yong J. Lee, Peter M. Corry, and Michael J. Borrelli* 611

Differential Expression of Two Homologous and Clustered Oncogenes, *Hstl* and *Int-2*, during Differentiation of F9 Cells
Teruhiko Yoshida, Hisako Muramatsu, Takashi Muramatsu, Hiromi Sakamoto, Osamu Katoh, Takashi Sugimura, and Masaaki Terada 618

Fe^{2+} Oxidation of α-Crystallin Produces a 43,000-Da Aggregate Composed of A and B Chains Crosslinked by Nonreducible Covalent Bonds
Martin J. McDermott, Raúl Chiesa, and Abraham Spector 626

Mannose 6-Phosphate Increases the Affinity of Its Cation-Independent Receptor for Insulin-like Growth Factor II by Displacing Inhibitory Endogenous Ligands
Constantin Polychronakos, Harvey J. Guyda, and Barry I. Posner 632

Effect of Phorbol Myristate Acetate on Fatty Acid Uptake and Distribution in Human Promyelocytic Leukemia (HL-60) Cells *in Vitro* *U. N. Das* 639

Expression of H-2K and H-2D Genes by PYS-2 Teratocarcinoma Cells
Toshi Nagata, Takashi Morita, Masami Nozaki, and Aizo Matsushiro 648

Identification of the Full-Length Coding Sequence for Human Galactosyltransferase (β-*N*-Acetylglucosaminide:β1,4-Galactosyltransferase)
Khaled A. Masri, Hubert E. Appert, and Michiko N. Fukuda 657

Activation of Muscle Phosphofructokinase by α-Glucose 1,6-Bisphosphate and Fructose 2,6-Bisphosphate Is Differently Affected by Other Allosteric Effectors and by pH
Vicente Andrés, José Carreras, and Roser Cussó 664

Identification of a Platelet M_r 22,000 GTP-Binding Protein as the Novel *smg*-21 Gene Product Having the Same Putative Effector Domain as the *ras* Gene Products
Toshihiko Ohmori, Akira Kikuchi, Katsuhiko Yamamoto, Masahito Kawata, Jun Kondo, and Yoshimi Takai 670

Norepinephrine and GTP-γ-S Increase Myofilament Ca^{2+} Sensitivity in α-Toxin-Permeabilized Arterial Smooth Muscle
Junji Nishimura, Michael Kolber, and Cornelis van Breemen 677

Mass Measurements of Inositol(1,4,5)trisphosphate in Rat Cerebral Cortex Slices Using a Radioreceptor Assay: Effects of Neurotransmitters and Depolarization
R. A. John Challiss, Ian H. Batty, and Stefan R. Nahorski 684

The Polyene Antibiotic Amphotericin B Inhibits the Na^+/K^+ Pump of Human Erythrocytes
A. Vertut-Doi, P. Hannaert, and J. Bolard 692

Morphine Activation of c-*fos* Expression in Rat Brain
Sulie L. Chang, Stephen P. Squinto, and Richard E. Harlan 698

Rat Testis $P450_{17\alpha}$ cDNA: The Deduced Amino Acid Sequence, Expression, and Secondary Structural Configuration *Mikio Namiki, Masaya Kitamura, Ellen Buczko, and Maria L. Dufau* 705

Isolation and Primary Structure of Human Peptide YY
Kazuhiko Tatemoto, Itsuro Nakano, George Makk, Pamela Angwin, Michael Mann, James Schilling, and Vay Liang W. Go 713

Isolation of a Biologically Active Fragment from the Carboxy Terminus of the Fetal Rat Binding Protein for Insulin-like Growth Factors *Jia-Fang Wang, Brian Hampton, Tevie Mehlman, Wilson H. Burgess, and Matthew M. Rechler* 718

Azathioprine's Inhibitory Effect on Prostaglandin E_2 Production Is Not via Cyclooxygenase Inhibition *Nava Naveh, Chana Weissman, and Shlomo A. Dottan* 727

The Affinities of Prostaglandin H_2 and Thromboxane A_2 for Their Receptor Are Similar in Washed Human Platelets *P. R. Mayeux, H. E. Morton, J. Gillard, A. Lord, T. A. Morinelli, A. Boehm, D. E. Mais, and P. V. Halushka* 733

Thapsigargin, a Novel Promoter, Phosphorylates the Epidermal Growth Factor Receptor at Threonine 669 *Kunio Takishima, BethAnn Friedman, Hirota Fujiki, and Marsha Rich Rosner* 740

Specific Cleavage of Diphtheria Toxin by Human Urokinase
Witold Cieplak, Charles Hasemann, and Leon Eidels 747

Characterization and Regulation by Protein Kinase C of Renal Glomerular Atrial Natriuretic Peptide Receptor-Coupled Guanylate Cyclase
Barbara J. Ballermann, Ravi B. Marala, and Rameshwar K. Sharma 755

Autocrine Differentiation-Inhibiting Factor (ADIF) from Chicken Erythroleukemia Cells Acts on Human and Mouse Early BFU-E Erythroid Progenitors
V. Krsmanovic, N. Morardet, J. M. Biquard, G. Mouchirout, B. Fasciotto, A. Ristic, C. Parmentier, J. P. Blanchet, D. Kanazir, J. P. Durkin, and J. F. Whitfield 762

In Vitro Activation of Neuraminidase in the β-Galactosidase–Neuraminidase-Protective Protein Complex by Cathepsin C *Raffaele M. D'Agrosa and John W. Callahan* 770

The Structure of the Amino Terminal Transforming Segment of the p21 Protein, Tyr^4–Tyr^{20} (with Asp^{12}), by Two-Dimensional NMR
P. A. Longo, M. S. Broido, J. Chen, H.-F. Kung, and M. R. Pincus 776

The Gene for Rat Uncoupling Protein: Complete Sequence, Structure of Primary Transcript, and Evolutionary Relationship between Exons
Frédéric Bouillaud, Serge Raimbault, and Daniel Ricquier 783

Transforming Growth Factor-β (TGFβ) Is Chemotactic for Human Monocytes and Induces Their Expression of Angiogenic Activity
David M. Wiseman, Peter J. Polverini, David W. Kamp, and S. Joseph Leibovich 793

Transcellular Conversion of Endogenous Arachidonic Acid to Lipoxins in Mixed Human Platelet–Granulocyte Suspensions
Charlotte Edenius, Jesper Haeggström, and Jan Åke Lindgren 801

α-Interferon Accelerates Lateral Diffusion of Daudi Cell Surface Differentiation Antigens: Measurement by Fluorescence Redistribution after Photobleaching
Elisabeth Balint, Adorjan Aszalos, and Philip M. Grimley 808

3-Deoxy-D-manno-octulosonate-8-phosphate Synthase Catalyzes the C–O Bond Cleavage of Phospho*enol*pyruvate *Lizbeth Hedstrom and Robert Abeles* 816

Molecular Cloning of Rat Phosphoprotein Phosphatase 2Aβ cDNA and Increased Expressions of Phosphatase 2Aα and 2Aβ in Rat Liver Tumors
Yoshinori Kitagawa, Ryuichi Sakai, Tomoko Tahira, Hiroyuki Tsuda, Nobuyuki Ito, Takashi Sugimura, and Minako Nagao 821

Two Homologous Oncogenes, *HST1* and *INT2*, Are Closely Located in Human Genome
Akihito Wada, Hiromi Sakamoto, Osamu Katoh, Teruhiko Yoshida, Jun Yokota, Peter F. R. Little, Takashi Sugimura, and Masaaki Terada 828

Demonstration of a 1–3 Disulfide Bond in a Synthetic Nonapeptide Derived from the Signal Sequence and N-Terminus of Human γ-Interferon
B. Pramanik, A. Tsarbopoulos, J. E. Labdon, M. Czarniecki, T. L. Nagabhushan, and P. P. Trotta 836

Characterization of Activin A Binding Sites on the Human Leukemia Cell Line K562
Carolyn A. Campen and Wylie Vale 844

ERRATA

Volume 153, Number 3, June 30, 1988: Kenichi Norioka, Masako Hara, Masayoshi Harigai, Atsushi Kitani, Tatsuo Hirose, Kimihiro Suzuki, Makoto Kawakami, Hirotsugu Tabata, Mitsuhiro Kawagoe, and Haruo Nakamura, "Production of B Cell Stimulatory Factor-2/Interleukin-6 Activity by Human Endothelial Cells," pp. 1045-1050 850

Volume 155, Number 3, September 30, 1988: Teruhiko Yoshida, Masakazu Tsutsumi, Hiromi Sakamoto, Kiyoshi Miyagawa, Shinichi Teshima, Takashi Sugimura, and Masaaki Terada, "Expression of the *HST1* Oncogene in Human Germ Cell Tumors," pp. 1324-1329 850

Volume 157, Number 3, December 30, 1988

AUTHOR INDEX, Volume 157, Number 3, December 30, 1988 ii

Phosphorylation by Cyclic AMP-Dependent Protein Kinase of a Human Platelet Mr 22,000 GTP-Binding Protein (*smg* p21) Having the Same Putative Effector Domain as the *ras* Gene Products *Masahiko Hoshijima, Akira Kikuchi, Masahito Kawata, Toshihiko Ohmori, Eikichi Hashimoto, Hirohei Yamamura, and Yoshimi Takai* 851

Interleukin-4 Inhibits Interleukin-1 Synthesis by a Post-transcriptional Mechanism
Mikko Hurme, Tessa Palkama, and Marja Sihvola 861

Characterization of the Calpastatin Defect in Erythrocytes from Patients with Essential Hypertension *S. Pontremoli, F. Salamino, B. Sparatore, R. De Tullio, R. Pontremoli, and E. Melloni* 867

A 64-kDa Protein Is a Candidate for a Thyrotropin-Releasing Hormone Receptor in Prolactin-Producing Rat Pituitary Tumor Cells (GH_4C_1 Cells)
Marianne Wright, Anders Høgset, Peter Alestrøm, and Kaare M. Gautvik 875

Immunochemical Detection of the α-Subunit of the G-Protein, G_z, in Membranes and Cytosols of Mammalian Cells *K. Spicher, K.-D. Hinsch, H. Gausepohl, R. Frank, W. Rosenthal, and G. Schultz* 883

γ-Interferon Inhibits Rat Granulosa Cell Differentiation in Culture
William C. Gorospe, Tammy Tuchel, and Barry G. Kasson 891

Organization of the Gene Encoding the Insulin-like Growth Factor Binding Protein IBP-1 *A. Brinkman, C. A. H. Groffen, D. J. Kortleve, and S. L. S. Drop* 898
Control of Parathyroid Hormone-Degrading Activity in the Opossum Kidney Cell: Possible Involvement of Protein Kinase C *Toru Yamaguchi, Masaaki Fukase, and Takuo Fujita* 908
The Amino Acid Sequence of the 24-kDa Subunit, an Iron–Sulfur Protein, of Rat Liver Mitochondrial NADH Dehydrogenase Deduced from cDNA Sequence *Morimitsu Nishikimi, Yoshitaka Hosokawa, Haruo Toda, Hiroshi Suzuki, and Takayuki Ozawa* 914
Inhibition and Labeling of the Rat Renal Na^+/H^+-Exchanger by an Antagonist of Muscarinic Acetylcholine Receptors *T. Friedrich and G. Burckhardt* 921
The *in Vitro* Activation of Cyclic AMP Production by Either Forskolin or Isoproterenol in the Syrian Hamster Pineal during the Day Is Not Accompanied by an Increase in Melatonin Production *Celsa Santana, Juan M. Guerrero, Russel J. Reiter, and Maureen E. Troiani* 930
Human Hexokinase: Sequences of Amino- and Carboxyl-Terminal Halves Are Homologous *Shigeo Nishi, Susumu Seino, and Graeme I. Bell* 937
The Calcium-Dependent Electrophoretic Shift of α-Lactalbumin, the Modifier Protein of Galactosyl Transferase *Marvin P. Thompson, Merton L. Groves, Dorothy P. Brower, Harold M. Farrell, Jr., Robert Jenness, and Claire E. Kotts* 944
Isozymes of Fructose 6-Phosphate,2-kinase:Fructose-2,6-bisphosphatase in Rat and Bovine Heart, Liver, and Skeletal Muscle *Matsuo Taniyama, Kazuo Kitamura, Helmut Thomas, J. W. R. Lawson, and Kosaku Uyeda* 949
Characterization of Receptor Tyrosine-Specific Protein Kinases by the Use of Inhibitors. Staurosporine Is a 100-Times More Potent Inhibitor of Insulin Receptor than IGF-I Receptor *Yoko Fujita-Yamaguchi and Satish Kathuria* 955
Tumor Necrosis Factor Induced DNA Fragmentation of HL-60 Cells *Laurence Elias, Penny B. Moore, and Stephen M. Rose* 963
Molecular Cloning of a cDNA for Rat Liver Monoamine Oxidase B *Akio Ito, Toyoko Kuwahara, Shuichiro Inadome, and Yasuhiro Sagara* 970
Molecular Mechanism of Action of the Vasoconstrictor Peptide Endothelin *Catherine Van Renterghem, Paul Vigne, Jacques Barhanin, Annie Schmid-Alliana, Christian Frelin, and Michel Lazdunski* 977
Interaction of DNA Hairpin Loops and a Complementary Strand by a Triplet of Base Pairs *Ulrich Baumann, Ronald Frank, and Helmut Blöcker* 986
Manganese, Mn-Dependent Peroxidases, and the Biodegradation of Lignin *Ian T. Forrester, Anthony C. Grabski, Richard R. Burgess, and Gary F. Leatham* 992
Inhibition of Na,K-ATPase and Sodium Pump by Anticancer Ether Lipids and Protein Kinase C Inhibitors ET-18-OCH_3 and BM 41.440 *Kazuhiko Oishi, Bin Zheng, John F. White, William R. Vogler, and J. F. Kuo* 1000
Purification from Human Hepatoma Cells of a 130-kDa Membrane Glycoprotein with Properties of the Heparin-Binding Growth Factor Receptor *Dennis DiSorbo, Er-gang Shi, and Wallace L. McKeehan* 1007
Cachectin/TNF Stimulation of ATP Synthesis in 30A-5 Preadipocytes *Kweon Haeng Lee and Ki-Han Kim* 1015
The Electrode Reaction of *Euglena gracilis* Cytochrome *c*-552 at Edge-Oriented Pyrolytic Graphite *Vinitha Senaratne and Edmond F. Bowden* 1021
Relationships between the Calmodulin-Dependent Adenylate Cyclases Produced by *Bacillus anthracis* and *Bordetella pertussis* *Donald L. Robertson* 1027
The Human Protein S Locus: Identification of the PSα Gene as a Site of Liver Protein S Messenger RNA Synthesis *Hans K. Ploos van Amstel, Pieter H. Reitsma, and Rogier M. Bertina* 1033
Induction of γ-Glutamyl Transpeptidase Activity by All-*trans*-Retinoic Acid in Cultured Rat Liver Epithelial Cells *Ming-Sound Tsao and Gerald Batist* 1039

Agonist but Not Phorbol Ester Induced Desensitization of Human Lymphocyte Prostaglandin Receptor Is Dependent on Tubulin Polymerization
Christer Nordstedt, Anders Kvanta, and Bertil B. Fredholm 1046

Homologous Recombination between Human Immunodeficiency Viral DNAs in Cultured Human Cells: Analysis of the Factors Influencing Recombination
S. Kalyanaraman, R. Jannoun-Nasr, D. York, P. A. Luciw, R. Robinson, and A. Srinivasan 1051

Nucleation and Accretion of Bioelastomeric Fibers at Biological Temperatures and Low Concentrations
Francesco Sciortino, M. Ugo Palma, Dan W. Urry, and Kari U. Prasad 1061

Species Crossreactivity of Human Progesterone Receptor Monoclonal Antibodies: Western Blot Analysis
Gary O. Gray and Pondichery G. Satyaswaroop 1067

Retinol-Binding Protein Is Synthesized in the Mammalian Eye
Robert L. Martone, Eric A. Schon, DeWitt S. Goodman, Dianne R. Soprano, and Joseph Herbert 1078

Five-hundred megahertz ^{1}H NMR of Chlorophylls in the Major Light-Harvesting Chlorophyll-Protein Complex of Photosystem II
Cor Dijkema, Geoff F. W. Searle, and Tjeerd J. Schaafsma 1085

Protein Kinase C Activities Are Increased in Rat Thyroid Epithelial Cells Expressing V-*ras* Genes
A. Spina, E. Chiosi, G. Illiano, M. T. Berlingieri, A. Fusco, and M. Grieco 1093

Characterization and Localization of a Novel Neuroreceptor for the Peptide Sarafotoxin
I. Ambar, Y. Kloog, E. Kochva, Z. Wollberg, A. Bdolah, U. Oron, and M. Sokolovsky 1104

Suppression of Synthesis of Tropomyosin Isoform 2 in Metastatic v-Ha-*ras*-Transformed NIH3T3 Cells
Keizo Takenaga, Yohko Nakamura, and Shigeru Sakiyama 1111

Inhibition of the Proteolysis of Rat Erythrocyte Membrane Proteins by a Synthetic Inhibitor of Calpain
Shujaath Mehdi, Michael R. Angelastro, Jeffery S. Wiseman, and Philippe Bey 1117

Effect of Metal Ions on the Adaptive Response Induced by *N*-Methyl-*N*-nitrosourea in *Escherichia coli*
Kazuhiko Takahashi, Takao Imaeda, and Yutaka Kawazoe 1124

Vitronectin Is Phosphorylated by a cAMP-Dependent Protein Kinase Released by Activation of Human Platelets with Thrombin
Beatriz Korc-Grodzicki, Miriam Tauber-Finkelstein, Daniel Chain, and Shmuel Shaltiel 1131

Molecular Cloning of a cDNA Coding for 70-kDa Subunit of Soluble Guanylate Cyclase from Rat Lung
Masaki Nakane, Shuichi Saheki, Takayoshi Kuno, Kuniaki Ishii, and Ferid Murad 1139

Inhibition of Hepatic Fatty Acid Oxidation by Bezafibrate and Bezafibroyl CoA
Patrick I. Eacho and Patricia S. Foxworthy 1148

Partial Agonist Activity of the Bombesin-Receptor Antagonist [Leu^{14}-ψ-CH_2-NH-Leu^{13}]-Bombesin in Frog Peptic Cells
Kenneth E. J. Dickinson, Naomi Uemura, M. Chandra Sekar, Huey B. McDaniel, Wayne Anderson, David H. Coy, and Basil I. Hirschowitz 1154

Corticosteroids Suppress Cyclooxygenase Messenger RNA Levels and Prostanoid Synthesis in Cultured Vascular Cells
J. Martyn Bailey, Amar N. Makheja, James Pash, and Mukesh Verma 1159

Endothelin: A New Inhibitor of Renin Release
Masao Takagi, Hiroaki Matsuoka, Keiichiro Atarashi, and Shigeru Yagi 1164

Crystallization and Some Properties of Acetylpolyamine Amidohydrolase from *Mycoplana bullata*
Kinya Fujishiro, Mayumi Ando, and Takayuki Uwajima 1169

Constitutive and Inducible Expression of Cloned Human Interferon-β1 Gene in HeLa Cells through an Episomal Eukaryotic Vector
Maurizio Giannì, Andrea Gallina, Giuseppe Barbanti-Brodano, and Gabriele Milanesi 1175

Two Different Protein Kinase Activities Phosphorylate *Ras2* Protein in *Saccharomyces cerevisiae*
Taduru L. V. Sreenath, Diego Breviario, Nadera Ahmed, and Ravi Dhar 1182

The Platelet Insulin Receptor: Detection, Partial Characterization, and Search for a Function *C. Falcon, G. Pfliegler, H. Deckmyn, and J. Vermylen* 1190
Opposite Effect of Interferon-γ on PGE_2 Release from Interleukin-1-Stimulated Human Monocytes or Fibroblasts *Laurence Friteau, Elisa Francesconi, Danielle Lando, Bernard Dugas, and Chantal Damais* 1197
ACTH Receptor-Mediated Induction of Leukocyte Cyclic AMP *Eve W. Johnson, J. E. Blalock, and Eric M. Smith* 1205
Apolipoprotein E Genotyping Using the Polymerase Chain Reaction and Allele-Specific Oligonucleotide Probes *Karl H. Weisgraber, Yvonne M. Newhouse, and Robert W. Mahley* 1212
Calcium Sensitive Isocitrate and 2-Oxoglutarate Dehydrogenase Activities in Rat Liver and AS-30D Hepatoma Mitochondria *Anne N. Murphy, Joanne K. Kelleher, and Gary Fiskum* 1218
Cyclosporine-A Transport in Isolated Renal Proximal Tubular Cells: Inhibition by Calcium Channel Blockers *Chandrasekharam N. Nagineni, David B. N. Lee, Brijesh C. Misra, and Norimoto Yanagawa* 1226
Characterization of Mutant TMK368K Pig Citrate Synthase Expressed in and Isolated from *Escherichia coli* *Claudia T. Evans, Daniel D. Owens, Clive A. Slaughter, and Paul A. Srere* 1231
Di-O-alkylglycerol, Mono-O-alkylglycerol, and Ceramide Inositol Phosphates of *Leishmania mexicana mexicana* Promastigotes *B. N. Singh, C. E. Costello, D. H. Beach, and G. G. Holz, Jr.* 1239
Metabolism of Inositol-1,3,4,6-tetrakisphosphate to Inositol Pentakisphosphate in Adrenal Glomerulosa Cells *László Hunyady, Albert J. Baukal, Gaetan Guillemette, Tamás Balla, and Kevin J. Catt* 1247
Dissociative Extraction and Partial Purification of Osteogenin, a Bone Inductive Protein, from Rat Tooth Matrix by Heparin Affinity Chromatography *R. W. Katz and A. H. Reddi* 1253
A Measurement of Cerebral Glucose Uptake Rate by ^{31}P MRS *K. Koga and I. Miura* 1258
Radiolabeling of the Interferon-α Receptor *Jerome A. Langer* 1264
Bradykinin Stimulates Phosphodiesteratic Cleavage of Phosphatidylcholine in Cultured Endothelial Cells *Thomas W. Martin and Kevin C. Michaelis* 1271
Decrease in Bicarbonate Transport Activities during Epididymal Maturation of Porcine Sperm *Naomichi Okamura, Yutaka Tajima, and Yoshiki Sugita* 1280
The Induction of Glycogenolysis in the Perfused Liver by Platelet Activating Factor Is Mediated by Prostaglandin D_2 from Kupffer Cells *Johan Kuiper, Yolanda B. De Rijke, Freek J. Zijlstra, Marieke P. Van Waas, and Theo J. C. Van Berkel* 1288
Differences in Calcium Uptake in Native Canine Cardiac Microsomes Are Correlated with the Ratio of Unphosphorylated to Phosphorylated Phospholamban as Determined by Western Blot Analysis *C. Kasinathan, Z.-C. Xu, and M. A. Kirchberger* 1296
The Presence of a Novel Cellular Retinoic Acid-Binding Protein in Chick Embryos: Purification and Partial Characterization *Toshihiro Kitamoto, Takashi Momoi, and Mariko Momoi* 1302
Nucleotide Sequence and Tissue Distribution of the Human Mitochondrial Aspartate Aminotransferase mRNA *Stanislas Pol, Bernadette Bousquet-Lemercier, Muriel Pave-Preux, André Pawlak, Bertrand Nalpas, Pierre Berthelot, Jacques Hanoune, and Robert Barouki* 1309
Alterations in Intermediate Filament Proteins in Rat Kidney Proximal Tubule Epithelial Cells *Paul B. Hatzinger, Qin Chen, Liqun Dong, and James L. Stevens* 1316
Endogenous ADP-Ribosylation in Human Platelets *Luis Molina y Vedia, Roger D. Nolan, and Eduardo G. Lapetina* 1323
Insulin-Mediated Translocation of Glucose Transporters from Intracellular Membranes to Plasma Membranes: Sole Mechanism of Stimulation of Glucose Transport in L6 Muscle Cells *Toolsie Ramlal, Vivian Sarabia, Philip J. Bilan, and Amira Klip* 1329

Fibroblast Growth Factors Are Present in Adult Cardiac Myocytes, *in Vivo*
Edith Speir, Zhou Yi-Fu, Michael Lee, Shashi Shrivastav, and Ward Casscells 1336

Characterization of Rat and Human Tyrosine Hydroxylase Genes: Functional Expression of Both Promoters in Neuronal and Non-neuronal Cell Types
G. T. Coker III, L. Vinnedge, and K. L. O'Malley 1341

Isolation and Characterization of 5-Lipoxygenase from Tulip Bulbs
P. Reddanna, J. Whelan, P. S. Reddy, and C. C. Reddy 1348

Transforming Growth Factor-β Is a Potent Inhibitor of IL-1 Induced Protease Activity and Cartilage Proteoglycan Degradation
Srinivasan Chandrasekhar and Anita K. Harvey 1352

Endothelin Stimulates Phospholipase C in Cultured Vascular Smooth Muscle Cells
Thérèse J. Resink, Timothy Scott-Burden, and Fritz R. Bühler 1360

Azidothymidine Inhibits Mitogen Stimulated Growth and DNA-Repair in Human Peripheral Lymphocytes *B. Munch-Petersen* 1369

Regulation of Ion Transport in Hypophysial Pars Intermedia Follicular Cell Monolayers
Napoleone Ferrara and Denis Gospodarowicz 1376

Localization of $pp60^{c\text{-}src}$ in Growth Cone of PC12 Cell
Kenji Sobue and Keiko Kanda 1383

A Short Incubation Time in Insulin Binding Experiments Leads to Disappearance of Negative Cooperativity in H35 Hepatoma Cells
Cornelis P. de Vries, Timon W. van Haeften, and Eduard A. van der Veen 1390

PGE2-Induced Cyclic AMP Accumulation in Human CD4+ T Cells Is Strongly Enhanced during the CD2-Mediated Activatory Process *Ioannis Theodorou, Georges Bismuth, Sabine le Gouvello, Helene Gouy, and Patrice Debre* 1396

Age-Related Changes in the Expression of Cytochrome P450 (b+e) Gene in the Rat after Phenobarbitone Administration *P. C. Rath and M. S. Kanungo* 1403

ATP Stimulates Calcium Influx in Primary Astrocyte Cultures
J. T. Neary, C. van Breemen, E. Forster, L. O. B. Norenberg, and M. D. Norenberg 1410

Xenobiotic Oxidation by Cytochrome P450-Enriched Extracts of *Streptomyces griseus*
Michael K. Trower, F. Sima Sariaslani, and Fulton G. Kitson 1417

Evidence for the Existence of Tissue Specific Isoenzymes of Mitochondrial NADH Dehydrogenase *V. J. Clay and C. I. Ragan* 1423

Bradykinin-Induced Generation of Inositol 1,4,5-Triphosphate in Fibroblasts and Neuroblastoma Cells: Effect of Pertussis Toxin, Extracellular Calcium, and Down-Regulation of Protein Kinase C *Tao Fu, Yukio Okano, and Yoshinori Nozawa* 1429

Increase of Natural Benzodiazepines in Wheat and Potato during Germination
Johannes Wildmann 1436

ERRATA

Volume 156, Number 2, October 31, 1988: Marta Menegazzi, Franca Gelosa, Marina Tommasi, Kazuhiko Uchida, Masanao Miwa, Takashi Sugimura, and Hisanori Suzuki, "Induction of Poly(ADP-Ribose) Polymerase Gene Expression in Lectin-Stimulated Human T Lymphocytes Is Dependent on Protein Synthesis," pp. 995–999. 1444

Volume 154, Number 3, August 15, 1988: M. Galdieri, R. Faraonio, and V. Colantuoni, "Detection of Cellular Retinol-Binding Protein Messenger RNA in the Somatic Cells of the Rat Seminiferous Tubules," pp. 1174–1181. 1444

CUMULATIVE AUTHOR INDEX FOR VOLUMES 150–157

Volume 150

Abraham, Nader G., 717
Acton, John J., 1213
Agarwal, M. K., 449
Agoutin, B., 148
Akimoto, Kengo, 335
Akiyama, Hiroyuki, 605
Alberts, Alfred W., 1213
Alferyev, Ivan S., 426
Algranati, I. D., 947
Allan, E. F., 899
Amano, Kazuhiko, 605
Amenomori, Masanori, 225
Ando, Keiichi, 540
Aoyama, E., 1149
Aragonés, M. D., 583
Arai, Hiroshi, 60
Arakawa, Kikuo, 511
Aranda, Ana, 323
Arellano, Alejandro, 633
Arita, Hitoshi, 1170
Astaldi Ricotti, Giulia C. B., 931
Atkinson, T., 752

Baba, Shigeaki, 25, 605
Bachs, Oriol, 1162
Bahn, Rebecca S., 259
Baker, Michael E., 463
Balbaa, Mahmoud, 163
Balet, Caroline, 561
Ban, Toshihiko, 60
Barhanin, Jacques, 1051
Barstow, D. A., 752
Basu, Mitali, 1096
Batzer, Mark A., 655
Baur, Ursula, 278
Belcher, Daniel, 1063
Berridge, Michael J., 626
Berrios, Miguel, 665
Bestagno, Marco, 931
Bevers, Edouard M., 972
Biftu, Tesfaye, 1213
Billah, M. Motasim, 355
Blondel, M. O., 979
Bohn, Hans, 483
Boman, Bruce M., 591
Boublíková, P., 731
Brachet, Philippe, 723
Brattain, Diane E., 711
Brattain, Michael G., 711
Braulke, Thomas, 1287
Brennan, Mark D., 655
Brooker, David R., 1213
Brown, Kenneth D., 626
Brunet, Juan E., 633
Buckalew, Vardaman M., Jr., 648
Buckthal, David J., 828
Bugianesi, Robert L., 1213
Bühler, Fritz R., 278
Bürgin, Maria, 278
Burnette, Barry, 197
Burstein, David E., 1185
Butcher, Karen A., 399
Bützow, Ralf, 483

Cai, Ming Li, 1044
Caliendo, A. M., 904
Canales, Mauricio, 633
Carafoli, Ernesto, 1162
Cardoso de Almeida, M. Lucia, 476
Carver, John A., 552
Cashman, John R., 376
Castagnola, E., 702
Casteels, R., 681
Castellino, Francis J., 45
Catalán, R. E., 583
Caughey, George H., 376
Causin, Christa, 1287
Cerino, Antonella, 931
Chabala, John C., 1213
Chan, R. Y. Y., 1256
Chap, Hugues, 972
Chapman, George E., 391
Chen, Kuang Yu, 185
Cheng, Suzanne, 185
Chia, W. N., 752
Chiang, John Y. L., 853
Chikuma, M., 1149
Chopra, Ian, 371
Chung, Mina K., 1
Cirillo, C., 702
Clark, Jeff, 811
Clarke, A. R., 752
Clingman, Kelly A., 561
Codina, Juan, 848
Cohrs, Randall J., 82
Colonna, Marco, 931
Comerford, J. G., 899
Comfurius, Paul, 972
Conradt, Harald S., 97
Cook, George A., 1077
Cooke, Allan M., 626
Coon, Minor J., 10
Copp, Richard, 323
Cornaglia-Ferraris, P., 702
Cox, A. Chadwick, 745
Craik, Charles S., 376

Dautrevaux, Michel, 1221
Davies, David B., 371
Dawson, A. P., 899
de Franciscis, Vittorio, 287
De Jesus, O. T., 1027
de Jong, Corina C. C., 405
Della Bianca, Vittorina, 955
De Meyts, Pierre, 694
Demura, Hiroshi, 506
DePaoli-Roach, A. A., 197
Desselle, Trent D., 655
Devanney, James F., 1006
DeVito, William J., 599
Diamond, R. D., 532
Dixon, Dabney White, 1044
Doebber, Thomas W., 1213
Doi, Ryuichiro, 1251
Doteuchi, Masami, 1170
Douste-Blazy, Louis, 972
Drøbak, B. K., 899
Dusi, Stefano, 955

Echigo, Takashi, 33
Egan, Robert W., 355
El-Asmar, M. Farid, 909
Eliasson, Erik, 436
Endo, Yaeta, 1032
Eto, Takaaki, 133
Eustice, D. C., 965
Evans, Herbert J., 1012
Evans, Robert K., 917
Evanson, John M., 349

Farber, Emmanuel, 739
Farrés, Jaume, 1083
Fauvel, Josette, 972

Copyright © 1988 by Academic Press, Inc.
All rights of reproduction in any form reserved.

Favre, A., 979
Fehrmann, Catherine, 104
Feinberg, Harold, 1021
Feldman, P. A., 965
Fernández-Renart, Margarita, 118
Finkelstein, Judith A., 853
Fishman, Jack, 311, 1131
Fishman, Jerry H., 1131
Fong, Francis K., 399
Formstecher, Pierre, 1221
Forsayeth, John R., 694
Fuchimura, Kayoko, 1275
Fujii, Nobutaka, 1251
Fujiwara, Motohatsu, 1122
Fukuda, Masakatsu, 316
Fukui, Hiroyuki, 316
Fukumoto, Yasuo, 52
Fukuzaki, Hisashi, 52
Furuya, Hirokazu, 75
Fussi, Fernando, 931
Futaki, Shiroh, 1251

Galbraith, Richard A., 822
Gamble, Nancy L., 1213
Garfield, Susan H., 412
Gasa, Shinsei, 163
Gaul, Gisela, 841
George, Cherian, 942
George, Shaji T., 665
Ghoshal, Amit, 739
Gierschik, Peter, 841
Gies, Jean-Pierre, 673
Glenner, George G., 75
Goldfine, Ira D., 694
Goldstein, Gary W., 575
Gorman, R. R., 937
Goswami, Biswendu B., 82
Goto, Fumimasa, 1237
Goto, Ikuo, 75
Goto, Kumiko, 1237
Graham, Donald W., 1213
Graham, James P., 342
Granstrom, D., 987
Grapengiesser Eva, 419
Griffiths, Lyn R., 219
Grunberger, Dorit, 376
Grzeskowiak, Miroslawa, 955
Gschwendt, M., 545
Guan, Kun-Liang, 1083
Guerrero, Isabel, 1185
Gu, Jia-Li, 694
Gulick, Tod, 1
Gylfe, Erik, 419

Haar, Nancy C., 1012
Hadcock, John R., 665
Hagedorn, Curt H., 296
Hajdu, Joseph, 561
Hakoshima, T., 68
Hamazaki, Hideaki, 212
Hamazaki, Tomohito, 497
Hamilton, Gordon A., 828
Hanada, Nobuhiro, 687
Hanasaki, Kohji, 1170
Handa, Hiroshi, 1199
Hansson, Anders, 526
Hari, Joji, 605
Hariyama, Hisayo, 491
Harris, C., 1207
Hart, K. W., 752
Hasegawa, Akio, 1230
Hashimoto, Eikichi, 1176
Hashimoto, Yoshiaki, 1309
Hasilik, Andrej, 1287
Hatake, Katsuhiko, 1115
Hatanaka, Ikuo, 225
Hauser, Hansjörg, 97
Hayashi, Hiroshi, 1230
Hayashi, Izumi, 1069
Hayashi, Masahiko, 1069
Hayes, Mark P., 1096
Heimberg, Murray, 1077
Heintz, Roswitha, 775
Heisler, S., 781
Hellman, Bo, 419
Hepler, J. R., 1207
Herman, B., 1207
Hernandez, Xochil, 711
Heyman, T., 148
Hiken, Jeffrey, 197
Hirai, Yoshikatsu, 1106
Hirato, Tohru, 1106
Hishida, Shigeru, 1115
Ho, L., 904
Holbrook, J. J., 752
Hollósi, M., 1017
Hong, Yoeng-Man, 1106
Horiba, Nobuo, 506
Hortin, Glen L., 342
Hortsch, Michael, 111
Houlgatte, Rémi, 723
Huang, Chi-Kuang, 1006
Huang, Ruey-Ruey C., 156
Huhtala, Marja-Liisa, 483
Humbel, René E., 1287
Humphries, Martin J., 615
Hunt, Arthur G., 640
Hurley, W. L., 329
Hwang, San-Bao, 1213

Ideishi, Munehito, 511
Igarashi, Kazuhiko, 1302
Ihara, Yasuo, 1263
Ikai, Atsushi, 883
Ikata, M., 1268
Ikeda, Masaharu, 511
Ikehara, M., 68
Imura, Hiroo, 60
Ingelman-Sundberg, Magnus, 436, 526
Inoue, Chiyoko, 1302
Inoue, Kazutomo, 1251
Inoue, Toru, 25
Inui, Akio, 25
Ishikawa, M., 1268
Ismail, Asma, 18
Ito, Masahiko, 126
Itoh, Hiroshi, 60
Itoh, Kazuyuki, 263
Itoh, Zen, 877
Iwata, Kazushi, 1302

Jaeger, J., 996
Jaeschke, Hartmut, 568
Jänig, G. R., 996
Janssens, Pim M. W., 405
Javed, A. A., 904
Jímenez, Benilde, 118
Johansson, Inger, 436
Johnson, Alfred C., 412
Jullian, Carolina, 633
Junghans, Ulrich, 1287

Kajiyama, Goro, 133
Kakishita, Eizo, 1115
Kalimi, M., 449
Kamogashira, Takashi, 1106
Kanduc, Darja, 739, 835
Kanmura, Y., 681
Kantorczyk, Nancy J., 828
Kappas, Attallah, 822, 925
Kasai, Hisanori, 1170
Kawade, Yoshimi, 126
Kawaguchi, Yoshindo, 1193
Kawahara, Yasuhiro, 52
Kawase, Yoshito, 605
Kawashima, Hiroshi, 335
Kawashima, Hiroyuki, 1138
Keith, G., 148
Kennedy, Scott P., 1006
Kerr, D. S., 904
Khan, Bobby, 1077
Khani, Shahrokh C., 10
Kiel, Johnathan L., 1037
Kikkawa, Ryuichi, 225
Kikumoto, Yoshikazu, 1106
Kim, Sang Joo, 870
Kimura, Satoshi, 848
Kimura, T., 68
Kini, R. Manjunatha, 1012
Kitagawa, Motoo, 1302
Kitano, Katsuhiko, 1275

Kittstein, W., 545
Kiyota, Takao, 1230
Kobayashi, N., 1149
Kodama, T., 987
Kogire, Masafumi, 1251
Kondo, Shuhei, 1230
Kondo, Yoichi, 877
Kosaki, Goro, 89
Krainev, Arkadii G., 426
Kraus-Friedmann, Naomi, 848
Kubota, Shinji, 304
Kuksis, Arnis, 271
Kumagai, Hidehiko, 33
Kumahara, Yuichi, 263
Kumar, Ajit, 517
Kung, Hsiang-Fu, 811
Kuroda, Yoichiro, 883
Kurzban, Gary P., 1155
Kusunoki, Atsushi, 1069
Kwon, M. S., 904

Lakey, J. H., 384
Lalezari, Parviz, 39
Lam, My-Hanh, 1213
Lambert, John M., 1032
Lanciotti, M., 702
Landry, Yves, 673
Lange, Louis G., 1
Langsford, Carol A., 1063
Lasker, Jerome M., 304
Lassing, Ingrid, 526
Lavu, Sukadev, 811
Lawrence, J. C., Jr., 197
Lazdunski, Michel, 1051
Lee, N. M., 237
Lee, William R., 655
Lee, Young J. C., 456
Lefebvre, Philippe, 1221
Levere, Richard D., 717
Levine, Alan E., 711
Lieber, Charles S., 304
Lin, Jane H-C., 717
Lindberg, Uno, 526
Loh, H. H., 237
Loh, T. T., 1256
Lorenz, Claudia, 97
Luber, John M., Jr., 39
Lyman, C. A., 532

Maeda, Shuichiro, 1237
Maget-Dana, R., 384
Mahadevappa, Vhundi G., 177
Maiti, Indu B., 640
Majer, Zs., 1017
Makita, Akira, 163
Malbon, Craig C., 665
Maly, Peter, 1287
Manabe, Reizo, 316
Mantsch, Henry H., 245
Markovac, Jasna, 575
Marks, F., 545
Marks, Paul A., 204
Marmé, Dieter, 841
Martínez, A. M., 583
Masui, Yoshihiro, 1106
Matsuo, Hisayuki, 1275
Matsuo, Mitsuyoshi, 469
Matsuoka, Yuji, 89
Matsushima, Kouji, 811
Matuda, Sadayuki, 816
Matuo, Seiji, 816
Mauersberger, Stephen, 859
McKnight, Mary K., 711
Meadows, Jane, 231
Meligren, Ronald L., 170
Melnick, D. A., 532
Merlino, Glenn T., 412
Meshulam, T., 532
Meyer, David I., 111
Mick, Steven J., 296
Miguel, B. G., 583
Mikhalin, Nikolai V., 426
Millnowicz, Joyce, 39
Missiaen, L., 681
Mitchell, Jerry R., 568
Mitrione, Steve M., 717
Miura, I., 1268
Miyahara, Tadashi, 1193
Miyairi, Shinichi, 311
Miyamoto, Yasufumi, 225
Mizuno, Keiko, 1106
Mizuno, Kensaku, 1275
Mizuno, Nobuhiko, 25
Mohr, Harald, 97
Mole, J. E., 904
Momose, Mitsuo, 1193
Montaldo, P. G., 702
Mori, Shunsuke, 1237
Mori, Toshihito, 1230
Moriguchi, Koei, 491
Morii, Narito, 60, 1122
Morimoto, Shigeto, 263
Morioka, H., 68
Morioka, Hideki, 25
Morita, Takasi, 1193
Morrier, E., 781
Morris, Brian J., 219
Morse, M. L., 866
Moss, Joel, 811
Motoyama, Yukio, 225
Mueller, Hiltrud S., 39
Mukherjee, J., 1027
Mukoyama, Masashi, 60
Mulder, Kathleen M., 711
Müller, Hans-Georg, 859
Murakami, Akira, 1230
Murphy, Leigh C., 192
Murphy, Liam J., 192
Myher, John J., 271

Nadel, Jay A., 376
Nagai, Kiyoyasu, 1115
Nagai, Yoshitaka, 760, 766
Nagamura, Kenji, 1106
Nagasawa, Shigeki, 1199
Nagashima, Kazuo, 925
Nagashima, Yoshinao, 1069
Nagata, Masao, 605
Nakagawa, T., 1149
Nakahama, Kazuo, 794
Nakai, Satoru, 1106
Nakaishi, Hitoshi, 760, 766
Nakajima, Yuki, 540
Nakamura, Shun-ichi, 1176
Nakamura, Toshio, 133
Nakanishi, Toshio, 133
Nakano, Kazumi, 1170
Nakano, Kyoko, 816
Nakao, Kazuwa, 60
Nakayama, M., 1149
Nakazato, Hiroshi, 89
Nanbu, Rika, 540
Narumiya, Shuh, 1122
Nastri, H. G., 947
Natori, Shunji, 540
Nishikawa, S., 68
Nishimura, Kazunobu, 60
Nomura, Kaoru, 506
Noro, Nobuhiro, 883

Obata, Ken-ichi, 1302
Obata, Kenji, 60
Ohashi, Yasuhiro, 1122
Oh-ishi, Sachiko, 1069
Ohkawara, Susumu, 1237
Ohmoto, Yasukazu, 1106
Ohno, Kouji, 1122
Ohsuye, Kazuhiro, 1275
Ohtani, Kohichi, 1170
Ohtsuka, E., 68
Oikawa, Shinzo, 89
Okamoto, Hiroshi, 1302
Okita, Minoru, 25
Olden, Kenneth, 615
Olinger, P. L., 937
Omura, Satoshi, 877
Onishi, Toshio, 263
Ooi, Tatsuo, 1244
Orimo, H., 1282
Osada, Toshiya, 883
Ouchi, Y., 1282
Ouenzar, B., 148
Oya, Manabu, 25

Pai, Jin-Keon, 355
Pajunen, Antti, 788
Paleček, E., 731
Pall, Martin L., 365, 1144
Parker, Janet, 909
Pascual, Angel, 323
Pastan, Ira, 412
Patel, M. S., 904
Pattinson, N. R., 890
Paturu, Kondiah, 811
Pegg, Anthony E., 788
Pellicer, Angel, 1185
Pepin, R. A., 904
Perin, F., 148
Pestaña, Angel, 118
Pieper, Stephen J., 1
Plessing, Annelore, 97
Podczasy, John J., 1294
Ponpipom, Mitree M., 1213
Ponzoni, M., 702
Porter, Todd D., 10
Potter, Barry V. L., 626
Pruett, Stephen B., 1037
Ptak, M., 384
Pujol, M. Jesus, 1162
Puri, Rajinder N., 1088

Quagliariello, Ernesto, 739, 835

Raefsky, C., 904
Rao, Parinam S., 39
Raso, Vic, 104
Rašovská, E., 731
Rauch, Albert L., 648
Reinisch, F., 148
Rejholcová, Magdalena, 802
Rejman, J. J., 329
Rengasamy, Appavoo, 1021
Resink, Thérèse J., 278
Richard, Claude, 1221
Rico, David M., 231
Rifkind, Richard A., 204
Roberts, K., 899
Roberts, William L., 271
Robertson, Carla K., 365
Robles, A., 583
Rösch, Paul, 444
Rosenberry, Terrone L., 271
Roskoski, Robert, Jr., 1088
Rosowsky, Andre, 104
Rossi, Filippo, 955
Roy, S., 237
Ruckpaul, K., 996
Russell, Stephen W., 196

Saheki, Takeyori, 816
Saito, Noriyuki, 225
Saito, Yoshihiko, 60
Sakai, H., 1268
Sakaki, Yoshiyuki, 75
Sakamoto, Taizo, 605
Sakamoto, Wataru, 1199
Sakanoue, Youichirou, 1176
Sakatani, Noriaki, 25
Sakurai, H., 1149
Sallman, Alan L., 231
Samuels, Herbert, 323
Sanai, Yutaka, 760, 766
Sasaguri, Manabu, 511
Sasaki, Hiroyuki, 75
Sassa, Shigeru, 311, 822, 925
Sato, Hiromi, 491
Sato, Yuko, 506
Satoh, Funihiko, 1199
Sawai, Sadako, 316
Schenkman, Sergio, 476
Schilling, Mary, 342
Schlichting, Ilme, 444
Schmid, Annie, 1051
Schreiner, George F., 1
Schunck, Wolf-Hagen, 859
Schwartzman, Michal L., 717
Schwarze, W., 996
Schweitzer, Karen, 615
Scott-Burden, Timothy, 278
Seppälä, Markku, 483
Seprődi, J., 1017
Serratosa, Joan, 1162
Sharma, Opendra K., 82
Shibahara, Shigeki, 717
Shibuya, Masabumi, 766
Shigeta, Shiro, 126
Shigeta, Yukio, 225
Shii, Kozui, 25, 605
Shimada, Kazunori, 1237
Shimizu, Sakayu, 335
Shimomura, Hiromi, 1309
Shinmen, Yoshifumi, 335
Shiono, Shozo, 60
Shiraishi, Tsunehito, 263
Shiratsuchi, Masami, 1230
Shiroki, Kazuko, 760
Shiu, Robert P. C., 192
Shizume, Kazuo, 506
Shohayeb, Mohamed, 371
Siegall, Clay B., 517
Siegel, Marvin I., 355
Sigal, Elliott, 376
Silverman, Richard B., 942
Skoglund, Göran, 526
Skorczynski, Stephen S., 828
Slee, A. M., 965
Smith, Charles V., 568
Smith, Diane S., 866
Smith, Terry J., 259
Soderling, Thomas R., 1309
Solan, Vishnu C., 104
Sonobe, Masanobu, 225
Soon-Shiong, Patrick, 775
Sorenson, John R. J., 252
Soslau, Gerald, 909
Spector, Abraham, 156
Stambuk, Boris B., 476
Steinmann, Beat, 140
Stillwell, William, 1063
Strott, Charles A., 456
Suemori, Shoichi, 133
Sugawara, Akira, 60
Sugita, Osamu, 311, 925
Sugiyama, Eiji, 497
Sumi, Shoichiro, 1251
Sunako, Michitoshi, 52
Superti-Furga, Andrea, 140
Surewicz, Witold K., 245
Suzuki, Hideyuki, 33
Suzuki, Makoto, 1193
Svoboda, Petr, 802
Swarup, Rupendra, 811

Tabata, Izumi, 816
Takahashi, Sho, 1244
Takai, Yoshimi, 52
Takami, Yoshiyuki, 126
Takasawa, Shin, 1302
Takeda, T., 1268
Takehara, Tadamichi, 687
Takemoto, L., 987
Takeuchi, K., 1268
Tanabe, Fuminori, 126
Tanaka, H., 1149
Tanaka, Shoji, 1275
Tang, Pauline M., 853
Taniguchi, Kazuhisa, 263
Tawaragi, Yasunori, 89
Taylor, Colin W., 626
Taylor, David J., 349
Tedeschi, Bruce, 655
Teh, Liew-Cheng, 391
Teplán, I., 1017
Terada, Akane, 1309
Terada, Masahiko, 225
Teragaki, M., 1268
Terasaki, Paul, 775
Terazono, Kimio, 1302
Thach, Robert E., 296
Thekkumkara, T. J., 904
Timkovich, Russell, 1044
Tobe, Takayoshi, 1251
Tochikura, Tatsurokuro, 33
Toibana, Asae, 794
Tomita, K., 68
Tomonaga, Masanori, 1263

Torii, Keiko, 877
Touati, Daniele, 866
Trotta, Paul P., 1096
Tsuda, Terutaka, 52
Tsukui, Kazuo, 126
Tsurugi, Kunio, 1032
Turner, Mervyn J., 476

Uchida, Yoko, 1263
Uesugi, S., 68
Ujihara, Makoto, 506
Urano, Shiro, 469
Urano, Shoko, 45
Urano, Tetsumei, 45
Ursini, Matilde Valeria, 287
Utsunomiya, Iku, 1069

Vadász, Zs., 1017
Van Lookeren Campagne, Michiel M., 118
Vedelago, Harry R., 177
Vesely, David L., 231
Vicendo, Patricia, 972
Virtanen, Ismo, 483
von Figura, Kurt, 1287

Wada, Hiroshi, 316
Wada, Yayoi, 1275
Wagner, George J., 640
Waheed, Abdul, 1287
Wakabayashi, Ichiro, 1115
Waldman, A. D. B., 752
Wang, Hsien-yu, 665
Wang, Kuan, 1155
Wang, Nai Ping, 316
Wang, Ren-Rong, 156
Wassall, Stephen R., 1063
Watanabe, M., 1282
Wei, Robert, 1294
Weich, Nadine, 204
Weill, D., 148
Weiner, Henry, 1083
Weiner, Lev M., 426
White, Sandra L., 615
Wiedmann, Brigitte, 859
Wiedmann, Martin, 859
Wiest, Laurie, 788
Wigley, D. B., 752
Wildrick, David M., 591
Wilhelm, Jiří, 802
Willingham, William M., 252
Winters, Chris J., 231
Wion, Didier, 723
Wissel, Paul S., 822
Wittinghofer, Alfred, 444
Wong, Caine W., 75
Wong, R., 987
Woody, A-Young M., 917
Woody, Robert W., 917
Woolley, David E., 349
Wu, Margaret S., 1213
Wuytack, F., 681
Wysong, D. R., 532
Yajima, Haruaki, 1251
Yamada, Hideaki, 335
Yamada, Kazuo, 133
Yamada, Takayuki, 60
Yamaki, Kohji, 1069
Yamamoto, Hiroshi, 1302
Yamamura, Hirohei, 1176
Yamashita, Hitoshi, 1230
Yamashita, Makio, 225
Yamashita, Naohiro, 497
Yamashita, Yoshihisa, 687
Yamasu, Akiko, 1069
Yan, Guo-Zai, 156
Yano, Keiko, 469
Yano, Saburo, 497
Yaso, Shinji, 605
Yasuda, Hitoshi, 225
Yasue, Hirofumi, 60
Yokono, Koichi, 25, 605
Yokoyama, Keitarou, 1193
Yonezawa, Kazuyoshi, 605
Yoshimura, Koji, 794
Yoshinaga, Masaru, 1237
Yoshiyama, M., 1268
Yoshizaki, Hideo, 1230
Yun, Mitsutoshi, 1251

Zagari, M., 1207
Zeller, Jay C., 259
Zewdu, M., 1017
Zhu, Y. X., 237
Zwaal, Robert F. A., 972

Volume 151

Abate, Cory, 1446
Ahmed, Syed Ashrafuddin, 672
Aizawa, Takako, 664
Alper, Robert, 480
Anderson, Kristin, 441
Anderson, W. French, 201
Andre, Pascale, 641
Andrieu, B., 749
Arai, Hiroshi, 1277
Arita, Hitoshi, 1352
Ase, Katsuhiko, 973
Athar, Mohammad, 1054
Atkinson, Paul R., 1427

Baba, Shigeaki, 1122
Babu, Árvind, 170
Babul, Jorge, 1033
Bacher, Adelbert, 512
Bachmann, C., 872
Balaram, H., 153
Balaram, P., 153
Ballard, F. John, 207
Balsinde, Jesus, 802
Balta, F., 402
Baltscheffsky, Margareta, 878
Bandisode, Madhukar S., 948
Bando, Yoshiaki, 78
Barletta, A., 1241
Barnes, Mark R., 693
Baroni, Maurizio, 1346
Battioni, J. P., 339
Bauerle, Ronald, 672
Baur, Ursula, 583
Bawab, W., 939
Baxter, Robert C., 815
Beaven, Michael A., 1402
Becker, E. L., 836
Behrens, M. Margarita, 561
BeMent, Dawn M., 114
Benoliel, Anne Marie, 641
Berger, Eric G., 314
Berry, Meera, 306
Berry, S., 1250
Berthelon, Marie-Claude, 163
Bespalova, Zh. D., 109
Biatry, B., 339
Bick, Tova, 1019
Bickers, David R., 1054
Bidlingmaier, F., 997
Bielinski, Donna, 1293
Bijleveld, C., 193
Birnbaum, George I., 608
Blaese, R. Michael, 201
Blake, Jerry W., 1441
Blas, Susan D., 1434
Blaszczyk-Thurin, Magdalena, 100
Böhlen, Peter, 408
Bongrand, Pierre, 641
Borders, C. L., Jr., 709
Born, W., 1081
Bots, Gerard Th. A. M., 1150
Bourdais, Julie, 347
Bowlin, Terry L., 859
Boyce, H. W., Jr., 844
Braquet, P., 730
Breuiller, M., 1454
Breviario, Diego, 1346
Brindle, Kevin M., 70

Brockway, Martine J., 1156
Brown, W. Ted, 1
Browne, Paul C., 9
Brusilow, William S. A., 926
Buckman, Trent D., 897
Bühler, Fritz R., 583
Bürgin, Maria, 583
Burton, Donald J., 554
Buse, Gerhard, 623

Cahill, Michael, 1293
Cajal, N., 402
Canada, Robert G., 679
Cannon, Susan V., 1173
Capo, Christian, 641
Caro, José F., 123
Carroll, Timothy R., 932
Carson, Dennis A., 788
Casnellie, John E., 794
Castaño, Eduardo M., 1150
Ceccarelli, Daniela, 320
Cernescu, C., 402
Chabrier, P. E., 730
Chader, Gerald J., 1105
Chan, Vivien W. F., 709
Chang, Raymond S. L., 1213
Chang, Ruth, 897
Chapekar, Mrunal S., 1180
Charli, J. L., 615
Chastre, E., 939
Chen, L. T., 844
Chen, M. F., 844
Chen, Tsing-Bau, 1213
Chino, Naoyoshi, 1285
Christophers, Enno, 883
Chûjô, R., 262
Chytil, Frank, 53
Clarke, Steven, 1136
Cleary, Edward G., 822
Cohen, Paul, 347
Colombo, J. P., 872
Constantiescu, St. N., 402
Cotlier, Edward, 991
Couraud, Francois, 187
Covarrubias, L., 615
Cox, Fred, 1194
Cronin, Michael J., 16
Crosby, R. M., 487
Crouch, Michael F., 178
Crumley, Gregg, 598
Csordas, Adam, 548
Cucurou, C., 339
Cummings, Archie, 1173
Cusanovich, M. A., 429

Damante, Giuseppe, 1194
Daniel, Larry W., 291
Danilov, S. M., 109
Darbon, Jean-Marie, 458
Darszon, Alberto, 1074
D'Avignon, D. Andre, 1039
Davis, Faith B., 1434
Davis, Paul J., 1434
Davison, Alan, 932
Dawicki, D., 1250
de Bianchi, A. G., 1004
Deguchi, Yasuhiro, 1395
Delbridge, Leigh, 649
de Lima, Maria Elena, 187
Detre, John A., 70
De Tullio, R., 590
Detwiler, Thomas C., 9
D'Eustachio, Peter, 1364
Devine-Gage, Evelyn A., 1
Dhar, Ravi, 1346
Di Francesco, Paolo, 298
Distelhorst, Clark W., 1226
Dohm, G. Lynis, 123
Domingo, M. T., 730
Dotti-Sigrist, S., 1081
Drohan, William, 598
Duenki, Rudolf M., 768
Dukhanina, E. A., 109
Dunwiddie, Chris, 382
Duriatti, Albert, 1378
Dwork, Andrew, 905

Eglitis, Martin A., 201
Eiduson, Samuel, 897
Eisenthal, Robert, 257
Ellis, Lee F., 1011
Elmets, Craig A., 148, 1054
Emami, S., 939
Eppenberger, Hans M., 408
Erne, Paul, 333
Ernst, M., 142
Escamilla, Edgardo, 1074
Eto, Yuzuru, 230
Evanson, J. M., 518
Evers, Alex S., 1039

Fernandez, Marta S., 851
Fernandez-Belda, F., 1093
Ferré, F., 1454
Feunteun, Jean, 982
Finkle, Trevor J., 473
Finlay, Thomas H., 1364
Fischer, J. A., 1081
Fischer, S., 1386
Fishman, Jordan B., 1293
Flesher, James W., 1441
Florio, T., 361
Fosse, Philippe, 1233
Foster, Lance C., 693
Fradelizi, Didier, 982
Fraenkel, Dan G., 1033
Frangione, Blas, 1150
Fraser, Blair A., 656
Friesel, Robert, 957
Froesch, E. R., 142
Frolik, Charles A., 1011
Fujii-Kuriyama, Yoshiaki, 275
Fujisawa, Hitoshi, 450
Fujita, Junko, 78
Fujita, Takuo, 1113
Fukuda, Katsunori, 1060
Fukuda, Yuka, 1113
Fung, Tung-Jing, 61
Furihata, Chie, 275
Furukawa, Kazuhiko, 215

Galibert, F., 749
Galindo, Jose, Jr., 1434
Gallinari, Paola, 298
Geelen, M. J. H., 193
Geelen, Math J. H., 781
Genetta, Thomas L., 1364
Gespach, C., 939
Gilbert, Joanna M., 1136
Glazer, Robert I., 1180
Goglia, F., 1241
Goldfine, Ira D., 123
Gomez-Fernandez, J. C., 1093
Gómez-Puyou, Armando, 1074
Gonzalez, Fernando A., 1205
Gonzalez-Martinez, Marco T., 851
Gordon, Paul B., 40
Gradwohl, M., 872
Graham, James P., 417
Grapengiesser, Eva, 1299
Gregory, Harry, 883
Gressner, Axel M., 222
Grewal, Iqbal S., 440
Grimaldi, M., 361
Grisolia, Santiago, 568
Grivas, Spiros, 1326
Gross, David J., 1205
Grove, Deborah S., 94
Grover, A. K., 473
Gulati, Jagdish, 170
Guzman, Manuel, 781
Gylfe, Erik, 1299

Ha, Jong-Myung, 78
Haarmann, Ralf, 222
Haertle, Tomasz, 788
Hähnel, Roland, 1156
Halabi, Camal, 1019
Hamazaki, T., 1386
Hanasaki, Kohji, 1352
Hara, Hideki, 1395
Harris, R. Dean, 686
Hart, I. R., 518

Haruyama, Munetada, 725
Harvey, Jeanne P., 535
Hasunuma, Kohji, 215
Hawthorne, C. Ann, 926
Hayashi, Yukimasa, 32
Haycock, Joanna C., 1039
Hayes, Dora K., 656
Haynes, Bryant, 686
Hazzard, J. T., 429
Heinrichs, Marc, 623
Hellman, Bo, 1299
Hentschel, Wayne M., 327
Heppel, Leon A., 1205
Herbert, Joseph, 905
Hermsmeyer, Kent, 333
Hernandez-Yago, Jose, 568
Hicks, Mark, 649
Hindsgaul, Ole, 100
Hinek, Aleksander, 822
Hiraga, Koichi, 758
Hirata, Yukio, 1113
Hirayama, Chisato, 1128
Hiwasa, Takaki, 78
Ho, Chien, 70
Ho, Low-Tone, 61
Hochberg, Zeev, 1019
Honour, Sandra, 809
Hortin, Glen L., 417
Hosoda, Kiminori, 1277
Hossle, Johann P., 408
Hotta, Kyoko, 422
Houck, George E., Jr., 1
Houweling, M., 193
Hovingh, Peter, 327
Howard, Kathryn J., 1226
Huang, Chi-Kuang, 794
Huang, Laura C., 1416
Huang, S.-G., 1220
Hudecki, Michael S., 1434
Humphreys, W. Griffith, 1025
Hutson, T. B., 1220

Ichihara, Yoshikazu, 275
Ichinose, Masao, 275
Igarashi, Koichi, 701
Ihara, Kunio, 1339
Ikata, M., 865, 1408
Im, Jeong Hyok, 370
Imoto, Masanori, 236
Imura, Hiroo, 1277
Inoue, Y., 262
Iossa, S., 1241
Ishida, Yoshihiko, 1122
Ishiguro, Yoshihisa, 758
Ishihara, Kazuhiko, 422
Ishii, Ikuko, 422
Ishii, Yasumasa, 25
Ishikawa, M., 865, 1408
Isohashi, Fumihide, 763
Issandou, Marc, 458
Ito, Kumiko, 701
Ito, Yoshika, 158
Itoh, Hiroshi, 1277
Iwai, Masaru, 283
Iwane, Makoto, 701
Iwase, Hitoo, 422
Izawa, Tetsuya, 1262

Jacobs, John W., 382
Jacquemond, Mireille, 388
Jaffe, Howard, 656
Jayarama Bhat, G., 737
Jeltsch, Jean-Marc, 306
Jeng, Ingming, 1088
Jenkins, Edmund C., 1
Jenkins, Timothy M., 257
Jiménez, Antonio, 270
Joh, Tong H., 1446
Jones, Alun G., 932
Jope, Richard S., 774
Jordan, R. T., 506
Jorgensen, Anne M., 709
Joseph-Bravo, P., 615
Judd, Allan M., 913
Jungermann, Kurt, 283

Kadkhodayan, Saloumeh, 827
Kadner, Susan S., 1364
Kadomatsu, Kenji, 1312
Kageyama, Takashi, 275
Kasai, Hisanori, 1352
Katopodis, Andreas G., 499
Katunuma, Nobuhiko, 78
Katzenmeier, Gerd, 512
Kawasaki, Haruhiko, 672
Kearney, David J., 693
Kefalides, Nicholas A., 480
Keim, Pamela, 656
Kelly, P. T., 1332
Khachatourians, George, 809
Khan, Wasiuddin A., 148
Kibler, Philip K., 1434
Kikkawa, Ushio, 973
Kim, Hong-Seok, 130
Kimler, Bruce F., 568
Kimura, Kenji, 25
Kimura, Kotohiko, 763
Kimura, Narimichi, 248
Kimura, S., 396
Kimura, Terutoshi, 1285
Kinter, Michael, 1416
Kishimoto, Susumu, 1395
Kitani, Takako, 450
Klemm, Nancy, 1088
Klemme, Jay C., 148
Kobayashi, Tomoko, 242
Koda, Masahiko, 1128
Kohn, Donald B., 201
Kokuhu, Ikuo, 763
Komabayashi, Takao, 1262
Kominami, Eiki, 78
Koprowski, Hilary, 100
Kosaka, Yoshiyuki, 973
Koshihara, Yasuko, 1060
Koshimizu, Eizi, 1262
Koshinsky, Heather, 809
Kraus-Friedmann, Naomi, 396
Kubo, Shigeru, 1285
Kucich, Umberto, 822
Kuks, Paul F. M., 347
Kumagaye, Shin-ichiro, 1285
Kure, Shigeo, 758
Kurihara, Hidetake, 1352
Kurokawa, Tsutomu, 701

Lai, F. Anthony, 441
Lally, Kathleen M., 774
Lambing, Joseph L., 693
Lancaster, J. L., 656
Landolfi, E., 361
Langston, J., 1332
Lanni, A., 1241
Lapetina, Eduardo G., 178
Lapied, Bruno, 187
Laramee, Gary R., 794
Larner, Joseph, 1416
Lauquin, Guy J.-M., 388
Lawrence, John, 355
Le Bras, J., 749
Lee, S. G., 598
Lee, S. J., 822
Lenstra, R., 749
Leonard, Jack L., 1164
Le Van, Quang, 512
Levy, Brian L., 717
Liboi, Elio, 298
Lin, Tai-Shun, 608
Lin, Wayne H., 1427
Lindsay, James A., 1371
Liu, Qi-Yi, 441
Liverini, G., 1241
Lloyd, Jenifer R., 1054
Lloyd, R. Stephen, 598
Login, Ivan S., 913
Lotti, Victor J., 1213
Luyendijk, Willem, 1150
Lyle, Leon R., 1427
Lytton, Fiona D., 137

Macdonald, Timothy L., 1025
Maciag, Thomas, 957
MacLeod, Robert M., 913
Maeyama, Kazutaka, 1402

Magri, G., 361
Mansuy, D., 339
Marchiol-Fournigault, Carmen, 982
Marinotti, O., 1004
Markoff, Edith, 1427
Martone, Robert L., 905
Masini, Alberto, 320
Mason, Anthony J., 1099
Mastro, Andrea M., 94
May, Sheldon W., 499
Mazón, Maria J., 561
McCachren, S. Spence, Jr., 574
McCrory, Michael, 1293
McDonald, J. Ken, 827
McGillis, Joseph P., 535
McLendon, G., 429
Mecham, Robert P., 822
Meese, C. O., 1386
Meezan, Elias, 370
Mege, Jean-Louis, 641
Meissner, Gerhard, 441
Melloni, E., 590
Méndez, M., 615
Meucci, O., 361
Miki, Kazumasa, 275
Miles, Edith Wilson, 672
Miller, Joseph J., 9
Mimura, Tsutomu, 725
Mir, Lluis, 982
Mireille, Jacquemond, 388
Mitchell, Murray D., 137
Miura, I., 865, 1408
Miyagawa, Kiyoshi, 965
Moen, Robert C., 201
Mollinedo, Faustino, 802
Molokoedov, A. S., 109
Molski, T. F. P., 836
Monaco, Marie E., 717
Monden, Yasumasa, 1326
Moore, S., 1220
Morel, Alain, 347
Morii, Narito, 1277
Morishima, Isao, 1319
Morita, Hatsué, 672
Moritz, R. L., 1156
Mottershead, David G., 207
Mrowietz, Ulrich, 883
Mukhtar, Hasan, 148, 1054
Mukohata, Yasuo, 1339
Mukoyama, Masashi, 1277
Mulchahey, J. Jeffrey, 524
Muramatsu, Masami, 230
Muramatsu, Takashi, 1312
Murata, Masahiro, 230
Murawaki, Yoshikazu, 1128
Murty, V. L. N., 1046
Muscatello, Umberto, 320
Mutoh, Norihiro, 32
Myers, Steven R., 1441

Nagao, Yoshitaka, 236
Nagy, György, 524
Nakada, Tetsuya, 236
Nakagawa, Masanori, 1144
Nakajima, Hiroshi, 725
Nakakuki, Megumi, 965
Nakamura, Shun-ichi, 242
Nakano, Hiroshi, 1144
Nakano, Kazumi, 1352
Nakao, Kazuwa, 1277
Nakayama, Masaki, 1144
Nakayama, Reiko, 1256
Nanai, N., 262
Needleman, Dolores H., 130
Negoro, Shigeru, 1395
Neill, Jimmy D., 524
Niedel, James E., 574
Nikolics, Karoly, 1099
Nishimura, Kimio, 1144
Nishimura, Toshio, 1305
Nishiuchi, Yuji, 1285
Nishizuka, Yasutomi, 973
Nobuhara, Masahiro, 275
Noguchi, Shigeru, 78
Nomura, Hideaki, 973
Nourse, W. L., 506
Nunes, L. R., 1004
Nutt, Elka, 382
Nyrén, Pål, 878

O'Connor, Jose Enrique, 568
Oda, Hiromi, 1060
Odagiri, Hiroki, 965
Ogita, Kouji, 973
Ohmori, Masayuki, 215
Ohmura, Takao, 725
Ohyama, Mararu, 1060
Oka, Hiroshi, 275
Okabe, Masaru, 725
Okada, Hidechika, 743
Okada, Noriko, 743
Okamoto, Kazuki, 763
Okamoto, Mitsuhiro, 1188
Okamoto, Yasuyuki, 1144
Omura, Satoshi, 422
Ono, Takashi, 1188
Onomichi, Kazuya, 230
Ooyama, Toshiro, 1060
Organist, Michele L., 535
Osgerby, Katrina J., 1269
Osswald, Hartmut, 542
Oswald, Allison S., 1416
Ota, Irene M., 1136
Otani, Mieko, 48
Ovchinnikov, M. V., 109
Ozawa, Shogo, 1305

Pace-Asciak, Cecil R., 493
Padmanaban, G., 737
Paoletti, Claude, 1233
Parkhurst, R. M., 506
Parries, Gregory, 1205
Payan, Donald G., 535
Pelhate, Marcel, 187
Perlman, Rina, 1019
Perriard, Jean-Claude, 408
Peschle, Cesare, 298
Pfister, U., 872
Piepkorn, Michael, 327
Pillion, Dennis J., 370
Pinkerton, Frederick D., 130
Piotrowski, J., 1046
Pointis, G., 1454
Polgar, Peter, 1293
Pollina, Catherine M., 1434
Pontremoli, R., 590
Pontremoli, S., 590
Popescu, L. M., 402
Porter, Donald C., 1200
Pramanik, Alauddin, 878
Prelli, Frances, 1150
Presse, Francoise, 982
Prusoff, William H., 608
Pulido, Diego, 270

Quillet, Anne, 982
Quinn, Daniel M., 554

Radda, George K., 70
Raeside, James I., 163
Raghothama, S., 153
Raina, Ashok K., 656
Rajagopalan, Bheeshma, 70
Raju, S. M., 123
Ramakrishna, Narayanarao, 1
Rao, G., 997
Rao, Gadiparthi N., 991
Rao, K. Ranga, 656
Rapaka, R. S., 1220
Rapoport, Basil, 1194
Ratajczak, Thomas, 1156
Ravi Kiron, M. A., 466
Reeve, Tom S., 649
Renugopalakrishnan, V., 1220
Resink, Thérèse J., 583
Reynolds, Elwood E., 919
Ribeiro Diniz, Carlos, 187
Ricca, George A., 598
Richardson, Stephen B., 717

Richman, Douglas D., 788
Robakis, Nikolaos K., 1
Roberts, Margo, 306
Robison, B. C., 396
Rochat, Hervé, 187
Rosenberg, Elizabeth, 466
Rosenbloom, Joel, 822
Rosselin, G., 939
Rossi, Giovanni B., 298
Rossi, Kathrin, 548
Rousseau, Eric, 441

Saez, José M., 163
Saito, Kunihiko, 1256
Saito, Yoshihiko, 1277
Sakai, H., 865, 1408
Sakai, Shuzo, 236
Sakakibara, Shumpei, 1285
Sakamoto, Hiromi, 965
Sakamoto, Yukiya, 763
Sakharov, I. Y., 109
Sakiyama, Shigeru, 78
Salamino, F., 590
Salehi, Zahra, 574
Samso, A., 749
Sanchez, Pascale, 163
Sando, Julianne J., 16
Sano, Keiji, 48
Saperstein, R., 633
Sarnesto, Annikki, 100
Sarosiek, J., 1046
Sasada, Reiko, 701
Sasaki, Masayuki, 1402
Satouchi, Kiyosi, 1256
Saucier, Jean-Marie, 1233
Saway, William, 679
Schächtele, Christoph, 542
Schauenstein, Konrad, 548
Schettini, G., 361
Schlegel, Jörg, 408
Schmid, Cornelia, 512
Schmitt, Jeffrey D., 291
Schoenl, Marion, 1434
Schon, Eric A., 905
Schröder, Jens-M., 883
Schroepfer, George J., Jr., 130
Schuber, Francis 1378
Schwall, Ralph H., 1099
Schwartz, Charles F. W., 1416
Schwarz, Gerhard, 768
Schwarzkopf, Bruno, 512
Schweer, H., 1386
Schworer, C. M., 1332
Scott-Burden, Timothy, 583
Scott, Carolyn D., 815
Scott, Mitchell G., 1427
Seely, James E., 1427
Seglen, Per O., 40
Seifert, Roland, 542
Seno, Masaharu, 701
Sha'afi, R. I., 836
Shayman, James A., 114
Shenolikar, S., 1332
Shen, Tsung-Ying, 1416
Shibai, Hiroshiro, 230
Shimada, Nobuko, 248
Shimamoto, Tadashi, 236
Shimizu, Satoru, 158
Shimizu, Yoshifusa, 530
Shinoda, Shouhachiro, 1262
Shiono, Shozo, 1277
Shirakami, Gotaro, 1277
Silverman, Wayne P., 1
Simionescu, Dan, 480
Simplaceanu, Elena, 70
Simpson, D., 487
Simpson, Ellen, 382
Simpson, R. J., 1156
Sinha, Madhur K., 123
Skinner, W. A., 506
Skopek, T. R., 487
Slater, E. E., 633
Slomiany, A., 1046
Slomiany, B. L., 1046
Small, George W., 291
Smith, John A., 1446
Smyth, Derek G., 524
Soffer, R. L., 466
Sogawa, Kazuhiro, 275
Sohl, Julie, 554
Sokolovsky, Mordechai, 1069
Soler, F., 1093
Soon-Shiong, Patrick, 435
Sparatore, B., 590
Spinnewyn, B., 730
Steiner, M., 1250
Stephens, Thomas W., 130
Stock, Ann, 891
Stock, Jeff, 891
St. Pyrek, Jan, 130
Stracher, Alfred, 355
Strid, Åke, 878
Strous, Ger J., 314
Strout, H. V., 633
Suda, Kazuhiro, 1262
Sudo, Katsuichi, 701
Sugawara, Akira, 1277
Sugimura, Takashi, 965, 1326
Sugiyama, Yasuo, 1339
Summers, Stephen T., 16
Sunkara, Prasad S., 859
Sutphin, Mary S, 897
Sutton, Larry D., 554
Suzuki, Hideo, 1305
Suzuki, Tamio, 758
Suzuki, Yoshiyuki, 1358
Szabo, Laszlo, 207
Szonyi, Eva, 1099

Taguchi, Yoshitaka, 1402
Tahri-Joutei, A., 1454
Takagi, Yasuyuki, 1113
Takahashi, Kenji, 275
Takahashi, Takayuki, 275
Takai, Michihiro, 1285
Takano, Toshiya, 25
Takasu, Mika, 530
Takasu, Nobuyuki, 530
Takata, Shoichiro, 1113
Takatera, Kikuo, 1319
Takeda, Motoru, 1319
Takeda, T., 865, 1408
Takeuchi, K., 865, 1408
Tanaka, Nobuo, 1305
Tanaka, Rie, 158
Tanaka, Yoshitake, 422
Tang, Ghouzi, 1416
Taniguchi, Hiroshi, 1122
Tanji, Masao, 275
Tao, W., 836
Tatematsu, Masae, 275
Taylor, D. J., 518
Taylor, Jane E., 815
Teebor, George W., 1173
Terada, Masaaki, 965
Teragaki, M., 865, 1408
Testa, Ugo, 298
Thacore, Harshad R., 1434
Thomas, Dara, 686
Thompson, Errol, 679
Thurin, Jan, 100
Titov, M. I., 109
Tojo, Hiromasa, 1188
Tollin, G., 429
Tomomura, Mineko, 1312
Toth, Charles R., 86
Tran, Tuongvan T., 693
Trenti, Tommaso, 320
Tsuboi, Minoru, 1262
Tsuchiya, Tomofusa, 236
Tsuda, Masaaki, 236
Tsuda, Mitsuhito, 1326
Tsuji, Akihiko, 1358
Tsujikawa, Kazutake, 725
Tsukamoto, Akira, 25
Tuch, Bernard E., 1269
Tuena de Gómez-Puyou, Marietta, 1074
Turtle, John R., 1269

Ueda, Kiyotaka, 763
ul Haq, Riaz, 53

Uma, K., 153
Umemoto, Atsushi, 1326
Umezawa, Chisae, 48
Urakaze, M., 1386
Uribe, R. M., 615
Urry, Dan W., 686

Vaartjes, W. J., 193
Vacquier, Victor D., 1200
van Duinen, Sjoerd G., 1150
Van Kerkhof, Peter, 314
van Koppen, Chris J., 1069
Vargas, Jose Luis, 568
Varticovski, Lyuba, 137
Vermilion, Janice L., 130
Vicario, P. P., 633
vonRuecker, A. A., 997

Wada, Hiroshi, 1402
Waldbillig, Robert J., 1105
Walker, Jeffrey M., 16
Wallace, John, 306
Wallace, John C., 207
Wallimann, Theo, 408
Walmsley, Judith A., 86
Wasson, D. Bruce, 788
Watanabe, Takehiko, 1402
Webb, Watt W., 1205
Wegmann, Gabriela, 408
Weinberg, J. Brice, 574
Weitzman, P. David J., 257
Whitehead, R. J., 518
Williams, Daniel C., 1011
Williams, Donald S., 70
Wilson, William K., 130
Wisniewski, Henryk M., 1
Wolfe, Gloria, 1
Wong, Cing-Yuen, 891
Woolley, D. E., 518
Wu, Cuizhen, 1088
Wylie, David, 891
Wyss, Markus, 408

Yamada, Takashi, 530
Yamada, Takayuki, 1277
Yamagata, Sadako, 158
Yamaki, Hiroshi, 1305
Yamamoto, Masayuki, 758
Yamamoto, Y., 262
Yamamura, Hirohei, 242
Yamane, Kunio, 25
Yanagi, Shigeru, 242
Yanaihara, N., 939
Yang, Bob In-yu, 693
Yang, Shiaw-Der, 61
Yano, S., 1386
Yao, Xiu-Lan, 1
Yasuda, Katsuhiko, 1256
Yasuda, Naohiro, 725
Yasuda, Tatsuji, 743
Yasumoto, T., 361
Yokota, Shinji, 919
Yokoyama, A., 1386
Yokoyama, Shigeyuki, 78
Yoshida, Manabu, 1339
Yoshida, Teruhiko, 965
Yoshikawa, Kazuaki, 664
Yoshikawa, Kunihiko, 763
Yoshimi, Hiroki, 1113
Yoshiyama, M., 865, 1408
Yoshizawa Kumagaye, Kumiko, 1285
Young, Janice, 883
Yue, Dennis K., 649

Zaim, M. Tarif, 1054
Zalacain, Magdalena, 270
Zeller, Konrad, 1416
Zhang, Yao-Shi, 656
Zhang, Zi, 355

Volume 152

Abrahamson, W. G., 1348
Adachi, Koichi, 197
Adamik, Ronald, 957
Agrawal, D. K., 1221
Ahmad, Suhail, 1435
Aiton, James F., 294
Aktories, Klaus, 957
Aletti, Maria Giovanna, 744
Allison, William S., 968
Alvarez, Jose F., 1455
Amuro, Naoki, 1395
Ananthanarayanan, Vettai S., 830
Andraghetti, Gabriella, 1474
Anzano, Mario A., 1228
Arora, Pramod K., 1339
Arrondo, José Luis R., 69
Atsumi, Yusaku, 1117
Audemard, Etienne, 1
Avigliano, Luciana, 623

Baba, Shigeaki, 161
Bacher, M. A., 921
Bader, D. E., 1050
Bailly, Christian, 695
Bakker, B., 398
Bala, R. M., 359
Banerjee, R., 449
Bar, Robert S., 93
Bargmann, William J., 441
Baricordi, Roberto, 951
Baum, Bruce J., 1062
Baumann, Gerhard, 573
Bazer, Fuller W., 801
Bazzi, Mohammad D., 336
Beauregard, M., 612
Becker, E. L., 926
Beebe, S., 1504
Beggerly, Linda K., 1298
Beitz, D. C., 545
Béliveau, R., 484
Bell, Graeme I., 862
Beltrán, Carmen, 867
Bendinelli, Paola, 744
Benyamin, Y., 368
Berman, Judd M., 1070
Bernelli-Zazzera, Aldo, 744
Bernier, Jean-Luc, 695
Bertini, Riccardo, 237
Bertolini, Stefano, 1474
Beutler, Bruce, 973
Bhardwaj, Nina, 1144
Bhardwaj, R., 668
Bhattacharyya, Lokesh, 1076
Bhaumick, B., 359
Bianchi, Marina, 237
Bilski, J., 1421
Bird, Timothy A., 1490
Blackburn, Warren D., Jr., 136
Bockaert, Joël, 1185
Boes, Mary, 93
Bohn, H., 1131
Bolognesi, Martino, 623
Bonet, Armelle, 1
Bonner, Tom I., 1045
Boonstra, Johannes, 491
Booth, Kimberly C., 1213
Boquet, Patrice, 1361
Boscá, Lisardo, 149
Bose, Henry R., Jr., 441
Bosshard, R., 1193
Boudjada, T., 904
Brabet, Philippe, 1185
Braquet, Pierre, 527
Braulke, Thomas, 1248
Breen, Gail A. M., 264
Brennan, Mark D., 940
Brewer, C. Fred, 1076
Brewer, Michael T., 1289
Broersma, Robert J., 1070
Bronfman, Miguel, 987
Brown, Arthur M., 769
Brul, S., 1083

Buck, Stephen H., 1070
Buckalew, Vardaman M., Jr., 818
Bühler, F. R., 649
Burant, Charles F., 1353
Burk, Raymond F., 1463
Burns, C., 1008
Busby, Walker H., 1289
Buse, Maria G., 1353
Bussolati, Ovidio, 617
Buzan, Jenny M., 22
Bzowej, Natalie H., 933

Cabot, Myles C., 565
Caffrey, John M., 769
Caldarera, Claudio M., 497
Calvo, K. C., 559
Cano, Amparo, 1332
Cao, Hui-ting, 565
Caramelo, Carlos, 315
Carango, P., 1348
Caratti, Cinzia, 1474
Carré, Christian, 527
Carretero, O. A., 519
Castiglione-Morelli, M. A., 512
Castresana, José, 69
Cavallius, Jens, 169
Chabbott, Holly, 565
Chakraborty, Asit K., 605
Chan, Diana, 808
Chan, C. K., 1468
Charpie, John R., 910
Chernin, M. I., 1348
Chiba, Tsutomu, 383
Chon, Younghae, 1023
Chou, Janice Yang, 762
Christophe, J., 1242
Christophers, E., 277
Clark, Brian F. C., 169
Clark, Richard, 432
Clemmons, David R., 1289
Clô, Carlo, 497
Cody, Terence, 540
Cohen, A., 674
Colotta, F., 1104
Cooksey, Karen, 717
Cooper, Ralph L., 1213
Cordera, Renzo, 1474
Coulombe, Raymond, 732
Couraud, François, 1031
Cragoe, Edward J., Jr., 1304
Cramb, Gordon, 294
Crastes de Paulet, A., 1179
Craven, Patricia A., 1481
Crawford, David, 973
Creutz, Carl E., 1298
Cubitt, S., 753
Cutry, Anthony F., 216

Dacquet, C., 1165
Dall'Asta, Valeria, 617
Damon, M., 1179
Dasgupta, Amitava, 1435
Datta, Subhash C., 155
Dawson, Glyn, 724
Dayer, Pierre, 411
Degawa, Masakuni, 843
Dehaye, J. P., 1242
Dejana, E., 1104
de Laat, Siegfried W., 491
de la Rosa, F. F., 981
De Leon, D. D., 398
Demeule, M., 484
De Robertis, Eduardo, 534
DeRubertis, Frederick R., 1481
Desmeules, Jules, 411
Dhanireddy, Ramasubbareddy, 1447
Di Pietro, A., 1319
Díaz-Guerra, María J. M., 149
Díaz-Sánchez, V., 376
Díaz-Zagoya, J. C., 376
Dimitrov, D. P., 649
do Amaral, Antonia T., 344
Dohmen, Kazufumi, 184
Doussiere, Jacques, 993
Drummond, R., 392

Eguchi, C., 322
Elgavish, Ada, 99
Elliott, Mary Ellen, 886
Endo, M., 417
Endo, Yuichi, 703
Epand, Raquel F., 203
Epand, Richard M., 203
Eppenberger, Urs, 62
Escalante, Bruno, 1269
Esch, Fred, 717
Eskild, W., 1504
Evenson, Merle A., 598

Fabbro, Doriano, 62
Falck, John R., 1269
Farber, E., 921
Farias, Ricardo N., 113
Ferré, Juan, 49
Fishman, Jack, 783
Fishman, Jerry H., 783
Fleischer, Sidney, 308
Fleischmann, J. D., 879
Fourquet, Patrick, 1031
Fox, Jay W., 1298
France, Paul, 724
Franchi-Gazzola, Renata, 617
Frank, Bruce H., 1353
Frants, R. R., 1282
Freyer, James P., 463

Friesel, Robert, 432
Fujii, Shigeru, 107
Fujimoto, Nariaki, 44
Fujisawa, Yukio, 9
Fujita, Takuo, 383, 1151, 1416
Fukase, Masaaki, 1416
Fukushima, Jun, 1117
Fukushima, Tomihiro, 874
Funae, Yoshihiko, 680

Gagnon, Claude, 732
Gandini, Enrico, 951
Garcia-Sainz, Adolfo, 1185
Garg, Uttam C., 893
Garro, Anthony J., 423
Gates, Cynthia A., 406
Gatti, Giuseppina, 623
Gautheron, D. C., 1319
Gauthier, C., 56
Gayda, Randall, 1023
Gazzola, Gian C., 617
Geokas, Michael C., 688
Gerzer, Rupert, 1263
Gheller, Stephen F., 629
Gherzi, Roberto, 1474
Ghezzi, Pietro, 237
Ghrayeb, John, 1144
Gibson, G. G., 921
Godinot, C., 1319
Goldberg, Howard, 552
Goldman, Jerome M., 1213
Gómez-Puyou, A., 867
Goto, A., 322
Goto, Yoshitaka, 1395
Gotoh, E., 37
Greig, Russell, 1228
Grunberger, D., 449
Guillamón, Juan J., 49

Haber, Edgar, 910
Hagerty, Kathleen, 973
Hagiwara, Masatoshi, 270, 642
Hamamori, Yasuo, 285
Hamamoto, Toshiro, 1255
Hamilton, Susan, 825
Hammer, Robert A., 231
Hanaki, Yoshihiro, 1310
Hancock, Larry W., 83
Hanley, Rochelle M., 122
Hanover, John A., 469
Hansson, V., 1504
Harik, Sami I., 1339
Harper, Kimberly, 940
Harris, S. G., 1383
Hartman, Fred C., 579
Hartrodt, B., 512
Hashimoto, Yoshiyuki, 843

Hassid, Aviv, 893
Hassman, C. Fred, 1070
Havekes, L. M., 1282
Hayakawa, Mika, 1310
Hayashi, Kensuke, 776
Hayashi, Norio, 107
Hayashizaki, Yoshihide, 703
Hazum, Eli, 1326
He, Xinjun, 1062
Head, S., 674
Hecht, Leslie B., 1200
Heck, Louis W., 136
Heim, Jörg-Martin, 1263
Hein, Joy F., 1213
Helbecque, Nicole, 695
Heminger, Eileen F., 1070
Hénichart, Jean-Pierre, 695
Herchuelz, A., 1242
Hermann, M., 1242
Hervás, M., 981
Heymans, H. S. A., 1083
Hidaka, Hiroyoshi, 270, 642
Hildreth, John, IV, 83
Hill, Kristina, E., 1463
Hinds, Michael, 808
Hintz, R. L., 398, 1131
Hirai, Yoshikatsu, 1401
Hirano, Masami, 257
Hirata, Hajime, 1158, 1255
Hirata, Tatsumi, 1376
Hirata, Yukio, 1097
Hirawa, N., 37
Hirose, S., 37
Hirosumi, Jiro, 301
Hoffman, Eric K., 143
Homburger, Vincent, 1185
Hong, Yeong-Man, 1401
Hori, Hitoshi, 849
Horst, R. L., 545
Hosaka, M., 37
Hoshijima, Masahiko, 285
Houssin, Raymond, 695
Hsiao, W. L. W., 449
Huang, S. J., 1173
Huber, R. E. 1050
Hué, H. K., 368
Hughes, Bronwyn G., 328
Husted, Lisa D., 1298
Hustmyer, F. G., 545
Hymel, Lin, 308

Ichinose, Hiroshi, 15
Ihara, Izumi, 636
Ihara, Setsunosuke, 636
Iijima, Yasuteru, 456
Iijima, Yoshio, 874
Iino, M., 417
Ikeda, Takuya, 1138
Ikeda, Tetsuya, 1376
Ikehara, Morio, 962
Imaoka, Susumu, 680
Imbach, J.-L., 56
Imbembo, A. L., 879
Inada, Yuji, 739
Inano, Hiroshi, 789
Ino, Teruo, 257
Inoue, Tsutomu, 1388
Insler, Vaclav, 1326
Inui, Makoto, 308
Inui, Tetsuya, 383
Ishibashi, Hiromi, 184
Ishido, M., 37
Ishiguro, T., 322
Ishii, M., 322
Ishikawa, Y., 37
Ishizuka, Yasuyuki, 849
Islam Khan, M., 1076
Ito, Akihiro, 44
Itoh, Hidehiko, 1038
Itoh, Yasuaki, 9
Ivanova, Krassimira, 1263
Iwasawa, Norio, 1376

Jacquemond, Vincent, 1002
Jahnsen, T., 1504
Jayasimhulu, Koka, 540
Ji, Yue-Hua, 636
Johnson, Adam, 893
Johnson, Howard M., 801
Johnson, Warren V., 432
Jones, David E., Jr., 940
Julliard, J. H., 1319
Junghans, Ulrich, 1248
Justen, James M., 1497

Kagawa, Yasuo, 1158, 1255
Kalikin, Linda, 559
Kamo, Naoki, 1090
Kardasz, A. M., 392
Kärkkäinen, T., 208
Kartha, Sreedharan, 862
Karush, F., 505
Katakami, Nobuyuki, 1151
Katakami, Yuko, 1151
Kawai, Kazuyoshi, 1401
Kawakami, Masaya, 636
Kawamoto, Susumu, 1117
Kawashima, Hiroyuki, 1388
Keller, R. Kennedy, 857
Kemp, Bruce E., 122
Kempenaar, Johanna, 491
Kenani, Abderraouf, 695
Kenny, Margaret, 1435
Kergoat, Micheline, 1015
Keyes, Jennifer, 973
Kikuchi, Masakazu, 962
Kikukawa, Tadahiro, 1447
Kim, Heasook, 351
Kinniburgh, Alan J., 216
Kinoshita, Yoshikazu, 1416
Kisiel, Walter, 1207
Kitazono, Takanari, 1304
Koba, Ann, 717
Kobatake, Yonosuke, 1090
Kobayashi, T., 417
Kobayashi, Tomoko, 1123
Koch, B., 904
Koehler, K. A., 879
Koga, Makoto, 717
Kohara, Hiromi, 197
Kohmo, Keiko, 1090
Koike, Hiroyuki, 456
Koizumi, Tamio, 1151
Kolch, Walter, 1045
Komatsu, Ryoya, 1038
Konda, Yoshitaka, 161
Kono, Norio, 1038
Kosaka, Futami, 874
Koshino, T., 1221
Krause, M. O., 753
Krěn, Vladimír, 190
Kubota, Ichiro, 1376
Kudo, Jiro, 184
Kumanishi, Toshiro, 837
Kuo, Tuan H., 1111
Kurihara, Tadashi, 837
Kuroda, Shun'ichi, 9
Kurosawa, Yoshikazu, 257
Kurz, J., 753
Kusunoki, Jun, 301

Lakshmanan, J., 1008
Lambert, Hye Chong L., 688
Lampugnani, M. G., 1104
Lane, James M., 1463
Laniado-Schwartzman, Michal, 1269
Larimer, Frank W., 579
Lau, Paul P., 688
Lau, Serrine S., 223
Law, Ping-Yee, 1369
Lawson, Larry D., 328
Lebrun, P., 1242
Lee, G., 252
Lee, P. D. K., 1131
Leemann, Thierry, 411
Leimbacher, W., 1193
Lermioglu, Ferzan, 893
Lesnikowski, Zbigniew J., 477
Levy, Joseph, 1326
Li, C. H., 1131
Lieber, Charles S., 423
Lindahl, Ronald, 940
Ling, Nicholas, 717

Ling, Victor, 552
Lingwood, C., 674
Liu, F., 1131
Loh, Horace H., 1369
Lohmann, Chris, 1410
Lohmann, Wolfgang, 1410
Loirand, G., 1165
Longo, Nicola, 617
López-Farré, Antonio, 129
López-Novoa, José M., 129
López-Solache, I., 376
Lorand, L., 505
Losada, M., 981
Louie, Alan K., 1369
Lovely, J., 753
Low, Robert L., 22
Lucia Bianconi, M., 344
Lundqvist, C., 208
Lutz, Frieder, 688
Lutz-Bucher, B., 904

Maciag, Thomas, 432
Madan Kumar, A., 593
Magee, Anthony, 243
Maheshwari, Vijay, 668
Maimone, Margaret M., 1056
Majumder, Hemanta K., 605
Malik, Sohail, 1435
Mamiya, Shigeo, 270
Mantovani, A., 1104
Marbach, Miriam, 1326
Marmiroli, Sandra, 497
Marquez Q., N., 30
Martinez, M. A., 30
Massa, Eddy, 113
Massacrier, Annick, 1031
Mato, Jose M., 1455
Matozaki, Takashi, 161
Matsubara, Kenichi, 703
Matsueda, Gary R., 910
Matsushima, Ayako, 739
Matsuyama, Tatsuo, 1038
Matsuzawa, Hiroshi, 1236
May, Lester T., 1144
Mayes, Janice, 808
Mazzilli, Cristina, 951
McArdle, Hayley, 243
McArthur, Mark, 825
McCrea, K. D., 1348
McCreary, Virginia, 862
McElroy, W. Keith, 1213
McMenamin, Mary G., 223
McPherson, John D., 711
Means, Anthony R., 122
Mechanic, Gerald L., 898
Medina, Jorge H., 534
Meezan, Elias, 99
Mege, J. L., 926
Méjean, C., 368
Melloni, Edon, 951
Mencia-Huerta, Jean Michel, 527
Mendoza-Hernández, G., 376
Mercado, Maluz, 717
Milligan, Graeme, 243
Minakami, Shigeki, 1304
Mindroiu, T., 519
Mironneau, C., 1165
Mironneau, J., 1165
Misono, Kunio S., 658
Miura, Shin-ichi, 843
Miyagawa, Jun-ichiro, 1038
Miyai, Kiyoshi, 703
Miyazaki, Takeshi, 9
Mizuno, Takeo, 776
Monk, P. N., 1173
Monks, Terrence J., 223
Montemurro, Antonio, 1474
Morales, M. Nelly, 987
Morgan-Boyd, Rebecca, 893
Mori, Kenjiro, 1255
Morihara, Kazuyuki, 1117
Morin, L., 612
Morishita, Tomoyuki, 333
Moriyama, Akihiko, 1158
Mornet, Dominique, 1
Morpurgo, Laura, 623
Moscarello, M. A., 1468
Moss, Joel, 957
Mrowietz, U., 277
Mufti, Siraj I., 423
Muga, Arturo, 69
Mukherjee, Anil B., 1447
Mullaney, Ian, 243
Muneoka, Yojiro, 1376
Murakami, Kazuo, 849
Murthy, Uma S., 1228
Murty, V. L. N., 1421

Nagao, Munehiko, 161
Nagar, S., 668
Nagashima, Akiko, 636
Nagatsu, Toshiharu, 15
Nakai, Masamichi, 1416
Nakai, Satoru, 1401
Nakamura, Akira, 383
Nakamura, Shun-ichi, 1123
Nakamura, Tetsuro, 301
Nakanishi, Makoto, 1158
Nakao, Masafumi, 962
Nakao, Shin-ichi, 1255
Nakao, Yoshinobu, 1151
Namba, Mitsuyoshi, 1038
Namiki, Masayuki, 843
Nanba, Eiji, 794
Naoi, Makoto, 15
Nayak, R., 593
Nelsestuen, Gary L., 336
Neubert, K., 512
Neuheiser, F., 1193
Newton, William E., 629
Niho, Yoshiyuki, 184
Nishikawa, Atsushi, 107
Nishino, Hiroshi, 456
Nishiyama, Akiko, 837
Nishizaki, Hogara, 161
Niznik, Hyman B., 933
Noda, Toshiharu, 383
Nonato, Roberto V., 76
Nonnecke, B. J., 545
Northrop, Dexter B., 406
Nucci, Franca A., 617
Nuñez de Kairuz, Martha S., 113

Ochiai, Masahiro, 270
Oda, H., 37
Oda, Tomiichiro, 456
Ogawa, Ryoichi, 1151
Ohmori, Toshihiko, 285
Ohta, Takahisa, 1236
Ohwada, Kimiko, 739
Oizumi, Kiyoshi, 456
Okada, Koji, 315
Okazaki, Taro, 1395
Okimura, Yasuhiko, 383
Okuda, Kenji, 1117
Olazabal, Marìa E., 113
Oliver, Guillermo, 113
Omura, Kiyoshi, 794
Onoda, Koji, 642
Orellana, Ariel, 987
Orimo, Hajime, 301
Orlowski, Ronald C., 203
Ortega, J. M., 981
Osada, Yasuaki, 1138
Ouchi, Yasuyoshi, 301
Oyamada, Ikuko, 1490
Øyen, O., 1504
Ozawa, Takayuki, 1310

Pacaud, P., 1165
Paladini, Alejandro C., 534
Palmer, Robbin L., 688
Pantaloni, Colette, 1185
Paoletti, J., 56
Park, Jeen-Woo, 916
Parke, D. V., 921
Parthasarathy, R., 351
Patterson, Mark C., 1481
Pažoutová, Sylvie, 190
Peavy, Daniel E., 1353
Pekonen, F., 208
Pelton, John T., 1070
Peña, Clara, 534
Penin, F., 1319

Pesce de Ruiz Holgado, Aida A., 113
Pestaña, Angel, 1332
Peterkofsky, Beverly, 1490
Petric, M., 674
Piccoletti, Roberta, 744
Pierson, Keith B., 598
Pignatti, Carla, 497
Pilloud, Marie-Claire, 993
Piva, Marta, 534
Polentarutti, N., 1104
Poltronieri, Licia, 951
Ponec, Maria, 491
Pons, F., 368
Pontzer, Carol H., 801
Poorman, Roger A., 849
Popoff, Michel R., 1361
Popovic, R., 612
Portha, Bernard, 1015
Potier, M., 484
Powell, D. R., 1131
Proud, D., 519

Rabier, M., 1179
Radike, Martha, 540
Radin, Norman S., 155
Rajalakshmi, S., 252
Rampe, David, 769
Ramwani, J., 1468
Rao, P. M., 252
Rapp, Ulf R., 1045
Rappocciolo, Emilia, 744
Rattan, Suresh I. S., 169
Rauch, Albert L., 818
Rayner, B., 56
Redweik, U., 1193
Regazzi, Romano, 62
Rehnberg, Georgia L., 1213
Reinhardt, T. A., 545
Rendón, J. L., 376
Řezanka, Tomás, 190
Riachi, Naji J., 1339
Ricard, Brigitte, 1031
Ricketts, J. Peter, 83
Ring, Mark, 1050
Ritvos, O., 208
Robinson, John J., 830
Roomi, M. W., 921
Rosenfeld, R. G., 398
Rosengart, Todd K., 432
Rougier, Oger, 1002
Rouot, Bruno, 1185
Roustan, C., 368
Roy, Bidyut, 44
Rubini, Michele, 951
Rugg, Elizabeth L., 294
Ruiz-Albusac, Juan M., 1455
Rutanen, E.-M., 208

Sada, Kiyonao, 1123
Sada, Toshio, 456
Saito, Michiya, 849
Saito, Yuji, 739
Sajdl, Přemysl, 190
Sakai, Keiko, 1123
Sakamoto, Choitsu, 161
Salvagnini, Mario, 423
Sam, Laurel M., 1497
Sandra, Alexander, 93
Santhanam, Uma, 1144
Saponara, Arthur G., 463
Sarma, D. S. R., 252
Sarosiek, J., 1421
Sasaki, Makoto, 1158
Sato, Keiki, 1138
Saunders, Grady F., 184
Savini, Isabella, 623
Sayre, Lawrence M., 1339
Schächtele, Christoph, 585
Schimmel, Richard J., 886
Schindler, Hansgeorg, 308
Schneider, Michael D., 769
Schor, Patricia L., 463
Schram, A. W., 1083
Schreier, Shirley, 344
Schrier, Robert W., 315
Schröder, J.-M., 277
Schroeder, Gabriele, 1236
Schultz, Franklin A., 629
Schutgens, R. B. H., 1083
Scicli, A. G., 519
Seeman, Philip, 933
Sehgal, Pravinkumar B., 1144
Seifert, Roland, 585
Selvatici, Rita, 951
Sesti, Giorgio, 1474
Seybert, David W., 177
Sha'afi, R. I., 926
Sharma, D., 668
Sharoni, Yoav, 1326
Shaw, Melissa A., 573
Shea, Phillip, 1070
Shenolikar, Shirish, 122
Shilton, Brian H., 711
Shimamura, Ryuji, 184
Shimasaki, Shunichi, 717
Shimizu, Kyutaro, 197
Shimizu, Reijyu, 1255
Shimojo, Nobuo, 680
Shimonaka, M., 37
Shionoiri, H., 37
Shirahama, Masafumi, 184
Shishido, Kazuo, 76
Silberman, Lynn, 808
Simon, Jean, 1015
Simonet, W. Scott, 857
Skorecki, Karl, 552
Slomiany, A., 1421
Slomiany, B. L., 1421
Smit, M., 1282
Smith, H. C., 1383
Smith, Harry B., 579
Smith, R. A., 1008
Smith, Robert J., 1497
Snyder, Sandra L., 1298
Song, Catherine S., 688
Soyode, Hilda S., 231
Spisni, Alberto, 617
Squires, Charles H., 1289
Stadel, Jeffrey M., 1228
Stetler, Gary L., 1289
Stewart, Kent D., 1441
Straus, Daniel S., 1200
Strauss, Jerome F., III, 143
Striberni, Rita, 411
Strijland, A., 1083
Sugimoto, T., 322
Sugiyama, Satoru, 1310
Sugiyama, Toshihiro, 107
Sun, Lumin, 1269
Suzuki, Yoshiyuki, 794

Tager, J. M., 1083
Takabatake, Ikuo, 1376
Takagi, Koichiro, 143
Takahashi, Katsunobu, 739
Takahashi, Masayuki, 1401
Takahashi, Tsutomu, 15
Takahashi, Yasuo, 837
Takai, Yoshimi, 285, 1151
Takano, Masaaki, 1401
Takasaki, I., 37
Takeshige, Koichiro, 1304
Takeuchi, Hiroaki, 1117
Taki, Fumio, 1310
Taniguchi, Naoyuki, 107
Taniyama, Yoshio, 962
Tanner, P., 208
Tantini, Benedetta, 497
Tarui, Seiichiro, 1038
Tatter, Stephen B., 1144
Taylor, Lorne, 830
Temussi, P. A., 512
Tertoolen, Leon G. J., 491
Thirion, Jacqueline, 1275
Thompson, Patricia, 973
Thompson, Robert C., 1289
Toback, F. Gary, 862
Tollefsen, Douglas M., 1056
Torralbo, Miguel, 129
Torres, Barbara A., 80
Toutant, Madeleine, 1185

Touvay, Caroline, 527
Townley, R. G., 1221
Townley, T. A., 1221
Treutelaar, Mary K., 1353
Trivellone, E., 512
Tsai, Phoebe, 315
Tsai, Su-Chen, 957
Tsuchiya, Yoshihiro, 184
Tsuji, Akihiko, 794
Tuena de Gómez-Puyou, M., 867
Tung, H. Y. Lim, 441
Twardzik, Daniel R., 216

Ueda, Takashi, 285
Ueno, Hironao, 843
Uno, Hatsuji, 1123
Unson, Cecilia, 243

Valencia, Alfonso, 1332
Valencic, F., 879
Vallet, Jeffrey L., 801
Van Den Bosch, H., 1083
Varela, Isabel, 1455
Vasseur, J.-J., 56
Vasudevan, S., 252
v. d. Kooij-Meijs, E., 1282
Veeraragavan, Kannappan, 732
Velasco, P. T., 505
Verkest, Veronik, 825
Vignais, Pierre V., 993
Vilain, Béatrice, 527
Volpi, M., 926
von Figura, Kurt, 1248

Waddell, T., 674
Wagner, Betty, 231
Waheed, Abdul, 1248
Wakamatsu, Yohko, 1090
Walton, Donald J., 711
Walz, D., 519
Wanders, R. J. A., 1083
Warburton, Robert J., 177
Warshawsky, David, 540
Watanabe, Hiromitsu, 44
Watanabe, Masae, 301
Watanabe, Masato, 642
Watanabe, Nobuaki, 1038
Watanabe, Shuichiro, 762
Watson, J., 392
Wattiaux, Robert, 1275
Weber, T., 208
Weinstein, I. B., 449
Welin, M., 208
Welsh, Clement J., 565
Wenner, Charles E., 216
Wentworth, D., 879
Westerveld, A., 1083
Whetton, A. D., 1173
Wiemer, E. A. C., 1083
Wijelath, E. S., 392
Wildgoose, Peter, 1207
Wilson, D. M., 398
Wiznitzer, Arnon, 1326
Wong, Pui Y., 552
Woodley, David T., 898
Woods, James S., 1428
Woudt, L. P., 1282
Wu, Xiaozai, 1062

Yadagiri, Pendri, 1269
Yamada, Hiroki, 1151
Yamada, K., 322
Yamaga, Nobuo, 197
Yamaguchi, Akinori, 383
Yamamoto, Shunji, 1117
Yamamoto, Yoshio, 962
Yamamura, Hirohei, 1123
Yamatani, Toshiyuki, 383
Yamauchi, Mitsuo, 898
Yamaura, Mayumi, 1395
Yasuda, Setsuko, 1401
Yasugi, Sadao, 776
Yoshida, Shigeki, 849
Yoshimoto, Takayuki, 739
Yoshioka, M., 322
Ysern-Caldentey, M., 30

Zagalak, B., 1193
Zhan, Junni, 1369
Zhuo, Shaoqui, 968
Zwelling, Leonard A., 808

Volume 153

Abe, Yumiko, 281
Abramson, Richard D., 340, 925
Adachi, Hideki, 109
Agarwal, M. K., 365
Agli, Brigitte, 489
Aida, Misako, 552
Akita, Hozuka, 51
Aksamit, Robert R., 359
Albano, Emanuele, 591
Alcazar, Alberto, 313
Algaier, Joseph, 328
Allard, L. R., 372
Altay, C., 741
Altin, Joseph G., 1282
Anand, Naveen N., 862
Angsuthanasombat, Chanan, 294
Aoki, Hiroyuki, 1276
Arai, Hiroyuki, 973
Arkhammar, Per, 984
Artalejo, C. R., 912
Ashley, C. C., 683
Ashton, David S., 1251
Assouline, Zahra, 1159
Audibert, Francoise, 31
Aznavoorian, Sadie A., 1076

Bachelet, Maria, 1267
Backlund, Peter S., Jr., 359
Bader, D. E., 301
Bahnak, Bruce R., 1159
Baird, Andrew, 792
Banaszak, Leonard J., 435
Bárány, Kate, 156
Bárány, Michael, 156
Barger, A. C., 347
Barry, Robert J., 177
Bartholomew, Jennifer S., 540
Battacharia, R., 741
Bazan, Nicolas G., 128
Beauregard, Guy, 1310
Beck, William T., 959
Becker, Jeanne L., 583
Beinfeld, M. C., 372
Béliard, R., 690
Benson, Ann M., 149
Berestetskaya, Yuliya V., 1116
Berggren, Per-Olof, 984
Berthézène, Françoise, 1060
Bertrand, William, 454
Besancon, F., 897
Biden, Trevor J., 1282
Blanco, Isaac, 1136
Blank, Logan, 734
Blau, N., 715
Bocquet, J., 690
Bogden, Arthur E., 81
Bouakka, M., 690
Bougis, P. E., 642
Bourgeade, M.-F., 897
Bowman, Elise, 177
Brandner, Regina, 1136
Braughler, J. Mark, 933
Brinkmann, A. O., 241
Brundage, Lorna, 760
Bruynzeel, Pieter L. B., 676
Bureau, Michel, 1006
Burke, John F., 377
Busbee, David, 1324
Buxbaum, Joel N., 198

Bygrave, Fyfe L., 1282
Bynum, Richard L., 289

Cagen, Lauren M., 422
Calvin, Marie-Claude, 945
Calvo, Carlos, 1060
Cantoni, Giulio L., 359
Carper, Deborah, 1051
Carter, Edward A., 377
Castillo, C. F., 912
Catt, Kevin J., 919
Cayatte, A., 502
Ceard, B., 642
Cederbaum, Arthur I., 612
Cerutti, Peter A., 59
Chakraborty, Chandan, 564
Chambers, Ian, 855
Chan, E.-C., 1229
Chang, Chungming, 39
Chang, Ding-Kwo, 832
Chang, John P., 919
Chapkin, Robert S., 799
Chase, Robin L., 933
Chavin, Kenneth D., 448
Chedid, Louis, 31
Chenevert, Janet, 1090
Chiara, David C., 435
Chitrakorn, Sarawanee, 671
Cho, Kyung Woo, 811
Chopra, Arvind, 209
Chou, Chen-Kung, 39
Christophers, Enno, 1223
Chu, Shu-heh W., 388
Chung, Yun Su, 840
Ciccarelli, A., 999
Cirtain, Margaret C., 959
Claesson, Hans-Erik, 203
Claiborne, Al, 261
Clejan, Liviu A., 612
Costa, L., 275
Cottalasso, Damiano, 591
Counis, Raymond, 664
Coy, David H., 81
Crawford, Dana R., 59
Crouch, Michael F., 21
Curtius, H.-Ch., 715

Dahlbäck, Helena, 267
Danielsson, Henry, 267
Darby, Nigel J., 1193
Das, Jyotirmoy, 967
Dasgupta, Ujjala, 967
Davis, John S., 583
Dean, William L., 848
Deb, Swati Palit, 249
Degand, Pierre, 1257
De Pablo, Flora, 142
de Pascual, R., 912
Dey, S. K., 564
Dhondt, J.-L., 715
Dianzani, Mario U., 591
Di Monte, Donato, 734
Di Salvo, Joseph, 156, 388
Diwan, Joyce J., 224
Dixon, Kendell L., 671
Doi, Ryuichiro, 1209
Dousa, Thomas P., 1152
Dubeaux, Christine, 31
Dubois, Catherine, 1090
Dumont, Jacques E., 632
Dunaway-Mariano, Debra, 177
Dusenbery, Kathryn E., 7

Efremov, D. G., 741
Efremov, G. D., 741
Eichenberger, Denise, 1310
Einfeldt, Sharon E., 289
Emoto, Naoya, 792
Erdödi, Ferenc, 156
Erickson, Kent L., 799
Erneaux, Christophe, 632
Errasfa, Mourad, 1267, 1271
Eto, Y., 1038
Eto, Yuzuru, 281

Faber, P. W., 241
Falconer, J., 1229
Fei, Y. J., 741
Feingold, Kenneth R., 576
Feldmann, Marc, 1144
Felipo, Vicente, 979
Felsted, Ronald L., 959
Flückiger, Rudolf, 353
Folkers, Karl, 888
Folkman, J., 347
Ford, Demaris Bailey, 149
Fowler, Patrick W., 1296
Frampton, Jonathan, 855
Frazier, Mark W., 435
Freiman, D. G., 347
Fronk, Jan, 518
Fronko, Gerald E., 448
Fuchimoto, Sadanori, 1276
Fujii, Nobutaka, 1209
Fujita, Hiroyoshi, 869
Fujita, Ricardo A., 162
Fukuda, Yuka, 1068
Fukuhara, Morio, 441
Fukui, Hiroyuki, 410
Fukuzaki, Hisashi, 51
Futaki, Shiroh, 1209

Galardy, Richard E., 773
Galbraith, Richard A., 869
Galbraith, Robert M., 1019
Gallop, Paul M., 353
García, A. G., 912
Garland, Rebecca C., 307
Gates, Ronald E., 183
Geurts van Kessel, A., 241
Gibbs, E. Michael, 992
Gifford, Donetta, 388
Gillies, Kevin, 87
Girbau, Matias, 142
Giudicelli, Yves, 489
Glover, Constance J., 959
Go, Masayoshi, 51
Goldschmidt, Denise, 1310
Goldstone, Alfred D., 1179
Gomez, Juan A., 142
Gonzalez-Redondo, J. M., 741
Gould, Gwyn W., 992
Graeter, Janelle S., 919
Graham, Caroline, 1051
Grant, Gregory A., 435
Grasso, Robert J., 583
Grisolía, Santiago, 979
Grobelny, Damian, 773
Gros, François, 1090
Grosso, Leonard E., 545
Grunert, F., 1105
Grunfeld, Carl, 576
Gschwendt, M., 1129
Guhathakurta, Indrajit, 967
Gupta, Radhey S., 598
Gupta, Ram P., 470
Gurgey, A., 741
Gustafsson, Maria, 267

Haas, David W., 340
Hagedorn, Curt H., 340, 925
Halaban, Ruth, 1301
Haley, Teresa, 224
Hamelink, Maartje L., 676
Han, Shou-Hwa, 39
Hanaoka, Fumio, 441
Haq, Asifa K., 1301
Hara, Masako, 1045
Harigai, Masayoshi, 1045
Harrison, Paul R., 855
Harutunian, Vahak, 1152
Hasegawa, Yoshihisa, 281
Hassan, Manuel, 209
Hayatsu, Hikoya, 552
Heimberg, Murray, 422, 606
Helgeson, Susan C., 46
Henderson, Earl E., 448
Herbener, George H., 848
Higuchi, Naoki, 1201
Hirata, Yukio, 1068
Hirose, Tatsuo, 1045
Hisatomi, Akitaka, 657
Hoekstra, William G., 535
Hogancamp, William E., 925

Hohman, Thomas C., 1051
Hook, Gary E. R., 470
Hoppe, Anzelm, 1152
Horio, Yoshiyuki, 410
Hoyt, J. C., 875
Hruszkewycz, Andrew M., 191
Hu, Cheng-po, 39
Huber, R. E., 301
Hublart, Marylène, 1257
Huisman, T. H. J., 741
Hulkower, Keren I., 699
Hurst, Robert E., 289
Hüther, Fritz-Joachim, 525

Iba, Yoshitaka, 767
Igarashi, Masao, 281
Ikemoto, Fumihiko, 1032
Ikemoto, Hideaki, 818
Imamura, Toru, 1123
Inoue, Kazutomo, 1209
Inoue, Sadako, 172
Inoue, Yasuo, 172
Inoue, Yoshiharu, 767
Ishibashi, Osamu, 657
Ishii, N., 683
Ishimi, Yukio, 441
Ishizaka, Yukihito, 1290
Ito, Masahiko, 648
Itoh, Kazuyuki, 1315
Iwagaki, Hiromi, 1276

Jacobson, Daniel R., 198
Jakobsson, Per-Johan, 203
Jamaluddin, Moideen P., 479
Johnson, Christopher M., 46
Jolivet, Michel, 31
Jouis, V., 690
Jung, Chang Hee, 840
Jutisz, Marian, 664

Kadenbach, Bernhard, 525
Kajiwara, Yuki, 1201
Kalimi, M. Y., 365
Kambayashi, Junichi, 1201
Kanamori, Akiko, 172
Kang, Jung Bu, 840
Kariko, Katalin, 448
Karjalainen, Ari, 1282
Kasir, Judith, 359
Kato, Johji, 1084
Katsunuma, T., 1167
Kawagoe, Mitsuhiro, 1045
Kawakami, Makoto, 1045
Kemppainen, B. W., 395
Kerbiriou-Nabias, Danièle M. 1159
Kestler, Daniel, 1301
Khan, M., Saeed, 1012
Kida, Osamu, 1084
Kijne, Arda M., 676
Kim, Sang Bog, 748
Kim, Suhn Hee, 811
Kimura, Akira, 767
King, Lloyd E., Jr., 183
Kiorpes, Anthony L., 535
Kishore, Ganesh M., 760
Kita, Toshihiro, 1084
Kitajima, Ken, 172
Kitani, Atsushi, 1045
Kittstein, W.,. 1129
Klaassen, P., 241
Kobayashi, Masashi, 657
Kobayashi, Sei, 625
Kodama, Kenji, 1084
Koenderman, Leo, 676
Koenig, Harold, 1179
Koga, Nobumitsu, 1123
Kogire, Masafumi, 1209
Koh, Gou Young, 811
Kohn, Elise C., 1076
Koide, Samuel S., 1025
Kok, Paul T. M., 676
Kokkinakis, Anastasia, 388
Kolbinger, F., 1105
Komorowski, Jan, 888
Konishi-Imamura, Lisa, 1214
Kosykh, Vladimir A., 1116
Krishnan, Lissy K., 479
Krutzsch, Henry C., 1076
Kucera, Gregory L., 417
Kuiper, G. G. J. M., 241
Kukuda, Kanji, 1244
Kull, Frederick C., Jr., 402
Kumahara, Yuichi, 1315
Kuno, Takayoshi, 1244
Kuramochi, Morio, 1068
Kuster, Th., 715
Kwon, Byoung S., 1301

Lacasa, Daniele, 489
Lainey, L. L., 347
Lancaster, Jack R., Jr., 87
Lane, M. Daniel, 96
Langen, P., 825
Langris, M., 690
Langsjoen, Peter, 888
Lapetina, Eduardo G., 21
Larner, Andrew C., 116
Larner, Joseph, 116
Lazdunski, Michel, 231
Lee, Jeoung Ho, 748
Legendre, P., 690
Lehmann, Ch., 825
Lerner, Richard, 805
Lesniak, Maxine A., 142
Levy, Jeffrey N., 1152
L-Fando, Juan, 313
Lienhard, Gustav E., 992
Likos, John J., 760
Lindström, Peter, 805
Linzel, M., 999
Liotta, Lance A., 1076
Lise, Dominique, 31
López, M. G., 912
Loyau, G., 690
Lu, Chung Y., 1179
Lund, D. P., 347
Luu, Bang, 671

Madsen, G., 1229
Maeda, Mitsuaki, 552
Mahadevappa, Vhundi G., 1097
Makinen, Kauko K., 74
Makinen, Pirkko-Liisa, 74
Malatesta, V., 275
Marangoni, Alejandro G., 104
Marchot, P., 642
Marinari, Umberto M., 591
Markossian, Kira A., 558
Marks, F., 1129
Martensen, Todd M., 96
Matasovic, A., 715
Matthes, E., 825
Mazier, Dominique, 31
McClane, Bruce A., 699
McDevitt, Cahir A., 708
McKenna, Charles E., 1152
McMullin, E. Lynne, 340, 925
McQueney, Michael, 177
Mecham, Robert P., 545
Melkonyan, Varduhi Z., 558
Melloni, Edon, 591
Mendez, Enrique, 313
Mendiola, John R., 7
Mendonca-Previato, Lucia, 1257
Merrell, R. C., 999
Merrick, William C., 340, 925
Meyer, Dominique, 1159
Mhatre, Molina C., 1186
Miller, Craig C., 799
Miller, Raymond R., 708
Minakami, Hisanori, 973
Miñana, María-Dolores, 979
Mirault, Marc-Edouard, 59
Misaka, Ayako, 256
Mitani, Shinji, 818
Mitsui, Youji, 1123
Mitsumoto, Yasuhide, 570
Miyake, Mikio, 1276
Miyamoto, Kaoru, 281
Mizokami, Keinosuke, 441
Mizuno, Shigeki, 334
Mohri, Tetsuro, 570
Moncada, Salvador, 1251
Montarras, Didier, 1090

Monti, E., 275
Moon, Timothy D., 722
Moore, Graham J., 1296
Morazzoni, F., 275
Mordhorst, Mary, 454
Moreau, Jacques-Pierre, 81
Moret, Rémy, 59
Mori, Takesada, 1201
Morimoto, Shigeto, 1315
Moro, M. A., 912
Morrison, Aubrey R., 454
Mrowietz, Ulrich, 1223
Mulder, E., 241
Murata, Kousaku, 767
Muratsu, Kazumasa, 888

Nagao, Minako, 1290
Nagata, Kazuhiro, 428
Nagata, Masao, 1051
Naik, Ulhas, 1
Nakamoto, Takahisa, 818
Nakamura, Etsuo, 657
Nakamura, Haruo, 1045
Nakamura, Shigeru, 1084
Nakamura, Takanori, 281
Nakanishi, Nobuo, 382
Nakano, Hirofumi, 1214
Nakano, Minoru, 973
Nakhla, Atif M., 1012
Nalbandyan, Robert M., 558
Nara, Yoshio, 888
Narang, Saran A., 862
Narimatsu, Shizuo, 779
Natsumeda, Yutaka, 321
Negishi, Kazuo, 552
Nilsson, Thomas, 984
Nishimoto, Takeharu, 1173
Nishimura, Chihiro, 1051
Noda, Atsuko, 256
Noda, Hiroshi, 256
Noda, Makoto, 1214
Nomura, Yasuyuki, 1214
Norioka, Kenichi, 1045
Norred, W. P., 395

Ochoa de Aspuru, Eduardo, 904
Odlander, Björn, 203
Ogita, Kiyokazu, 510
Ohkubo, T., 1167
Ohno, Kousaku, 463
Ohtsubo, Motoaki, 1173
Oikarinen, Jouko, 783
Okamura, Nobutaka, 109
Olsen, Richard W., 1006
Omae, Teruo, 1068
Onishi, Toshio, 1315
Orita, Kunzo, 1276
Oshima, Kenji, 818
Ourisson, Guy, 671

Padgette, Stephen R., 760
Paitian, Norair A., 558
Palmblad, Jan, 805
Palmer, Richard M. J., 1251
Panyim, Sakol, 294
Pao-intara, Manu, 294
Paracchini, L., 275
Parish, Edward J., 671
Park, M. C., 502
Partin, Kathryn, 249
Passareiro, Heloisa, 632
Peng, Ted, 135
Phi, Taek San, 840
Piétu, Genevieve, 1159
Pinset, Christian, 1090
Podres, Eugene A., 1116
Poli, Giuseppe, 591
Ponsin, Gabriel, 1060
Pontremoli, Sandro, 591
Poole, Leslie B., 261
Portilla, Didier, 454
Potier, Michel, 1310
Prasad, Kari U., 832
Pregenzer, Jeffrey F., 933
Pronzato, Maria Adelaide, 591

Quemeneur, Eric, 1310

Rajpara, Sanjay M., 217
Ramkumar, Vickram, 939
Rees, Daryl D., 1251
Reeves, H. C., 875
Rehm, Hubert, 231
Reichenbach, Nancy L., 448
Reiter, Russel J., 1186
Repin, Vadim S., 1116
Richards, James F., 135
Richardson, Philip C., 888
Riley, R. T., 395
Ring, M., 301
Ristiniemi, Jukka, 783
Rittenhouse, Susan E., 417
Robison, W. Gerald, Jr., 1051
Rochat, H., 642
Rodriguez, José, 1136
Rodriguez, Ricardo, 1136
Rogers, Kim R., 87
Rokolya, Anikó, 156
Rosa, Raymonde, 945
Rosén, Anders, 203
Rosenthal, H. A., 825
Rosner, William, 1012
Roy, Johnny B., 289
Roy, Pampa, 1
Russo-Marie, Françoise, 1267, 1271
Ryu, Hoon, 811

Sabrià, Josefa, 1136
Sacchettini, James C., 435
Saedi, Mohammad S., 855
Safa, Ahmad R., 959
Saga, Shinsuke, 428
Sagstetter, Maria, 498
Saijoh, Kiyofumi, 1244
Sakaue, Motoyoshi, 1244
Sakon, Masato, 1201
Salam, Walid H., 422
Salinas, Matilde, 313
Salomon, David, 1076
Sanadi, D. Rao, 224
Sánchez de Jiménez, Estela, 881
Sandy, Martha S., 734
Santiago-Schwarz, Frances, 198
Santoro, Samuel A., 217
Sasaguri, Toshiyuki, 14
Sasaki, Akira, 1084
Sasaoka, Toshiyasu, 657
Sassa, Shigeru, 869
Sato, Akihiko, 648
Sato, Kumie, 570
Sato, Tomokazu, 116
Sawamura, S., 1167
Schiffmann, Elliott, 1076
Schlesinger, David H., 31
Scholz, D., 825
Schram, A. W., 618
Schröder, Jens-M., 1223
Schutgens, R. B. H., 618
Schwaibold, H., 1105
Schwarz, K., 1105
Scotti, R., 275
Sen, Indira, 1
Sepulveda, Gabriela, 881
Seul, Kyung Hwan, 811
Seul, Kyung Mee, 811
Shahood, J. A., 347
Shibai, Hiroshiro, 281
Shigeta, Shiro, 648
Shigeta, Yukio, 657
Shiraishi, Tsunehito, 1315
Shuadolnik, Robert J., 448
Shuntoh, Hisato, 1244
Silbermann, F., 897
Silverman, K. J., 347
Simpson, A. W. M., 683
Sjövall, Jan, 267
Skubitz, Keith M., 7
Slieker, Lawrence J., 96
Smirnov, Vladimir N., 1116
Smith, Carey G., 855
Smith, Martyn T., 734

Smith, R., 1229
Smith, Thomas Henry, 888
Smyth, Derek G., 1193
Sok, Dai-Eun, 840
Somers, Scott D., 799
Somlyo, Andrew P., 625
Somlyo, Avril V., 625
Song, Gyeong-Bu, 1032
Sotomatsu, Akemi, 973
Soued, Mounzer, 576
Staatz, William D., 217
Stanley, Alison F., 14
Stanley, David W., 104
Starzec, Anna, 664
Stec, Jan, 1324
Steele, David F., 728
Stephen, Eric R., 862
Stiles, Gary L., 939
Stoming, T. A., 741
Storch, Thomas G., 952
Stracke, Mary L., 1076
Subbiah, M. T. R., 502
Sudarickov, Andrei B., 1116
Sugibayashi, Masaaki, 657
Sugimura, Keijiro, 753
Sugimura, Takashi, 1290
Sugino, Hiromu, 281
Sugioka, Katsuaki, 973
Sumi, Shoichiro, 1209
Sumimoto, Hideki, 256
Sunde, Roger A., 855
Sunouchi, Momoko, 441
Surguchov, Andrei P., 1116
Su, Tsung-Sheng, 39
Suzuki, Hiroko, 382
Suzuki, Kimihiro, 1045
Suzuki, Kunihiko, 463
Suzuki, Shingo, 973
Suzuki, Tohru, 1123
Sword, John W., 535

Tabata, Hirotsugu, 1045
Tager, J. M., 618
Tahira, Tomoko, 1290
Takagi, Yasuyuki, 1068
Takami, Yoshiyuki, 648
Takanaka, Akira, 441
Takata, Shoichiro, 1068
Takata, Yasumitsu, 657
Takazawa, Kazunaga, 632
Takeda, Takehiko, 1244
Taketoshi, Masato, 410
Talley, Glenda D., 952
Talussot, Corinne, 1060
Tam, You C., 209
Tamaki, Mikio, 657
Tanabe, Fuminori, 648
Tanaka, Chikako, 1244
Tanaka, Kenjiro, 1084
Tanaka, Takaharu, 1201
Tanaka, Tatsuya, 410
Taniguchi, Kazuhisa, 1315
Tatsumi, Kiyoshi, 256
Tawfik, Ossama W., 564
Taylor, Frederick R., 671
Taylor, John E., 81
Teater, Carroll, 773
Tello, Diana, 31
Teraoka, Hiroshi, 657
Tetaert, Daniel, 1257
Thach, Robert E., 340
Thang, M. N., 897
Thirion, Jean-Paul, 209
Thomas, Ancy, 479
Thomas, Nadine, 1159
Thomson, M., 1229
Ting, Ling-Pei, 39
Titani, Koiti, 281
Tobe, Takayoshi, 1209
Toczko, Kazimierz, 518
Tohda, Michihisa, 1214
Tokushige, Masanobu, 1236
Toledo, Alfonso, 1136
Tominaga, Munechika, 1032
Tompkins, Ronald G., 377
Toublan, Barbara, 162
Trapman, J., 241
Tsai, Ting-Fen, 39
Tso, Patrick, 606
Tsuda, Tomi, 1167
Tsujimoto, Masafumi, 109
Tsujinaka, Toshimasa, 1201
Turner, Martin, 1144

Umezawa, F., 1038
Urry, Dan W., 832
Usui, Akihiro, 818
Usui, Tsuguru, 818
Uyeda, Kosaku, 328

Vadnal, Robert E., 128
Van Alstyne, Eldwin L., 1019
van den Bosch, H., 618
van der Korput, J. A. G. M., 241
van Jaarsveld, Albert S., 1186
Van Rietschoten, J., 642
van Roermund, C. W. T., 618
van Rooij, H. C. J., 241
van Wijland, M. J. A., 618
Verhagen, Jan, 676
Vial, Christian, 1310
Virgo, Bruce B., 728
von Kleist, S., 1105
Vonderheid, Eric C., 448
Voorhorst, M. M., 241

Wada, Hiroshi, 410
Waga, Shou, 334
Wakulchik, Mark, 1301
Wanders, R. J. A., 618
Watanabe, Kazuhito, 779
Watson, Stephen P., 14
Watts, Thomas D., 992
Weber, George, 321
Wibbenmeyer, Jamie, 760
Wikvall, Kjell, 267
Wilcox, Henry G., 606
Wilhelm, F. Xavier, 162
Wilhelm, Marcelle L., 162
Williams, Merfyn H., 1019
Wilson, Lori L., 1076
Wing, Deborah A., 952
Winters, Debra K., 612
Witters, Lee A., 992
Woods, Virgil L., Jr., 217
Woodtli, Thomas, 353
Woolley, David E., 540
Wooten, Marie W., 67
Wrenn, Robert W., 67

Yajima, Haruaki, 1209
Yamada, Kenneth M., 428
Yamada, Masa-atu, 441
Yamada, Shozo, 382
Yamada, Yasukazu, 321
Yamaji, Yasufumi, 321
Yamamoto, Ikuo, 779
Yamamoto, Kenjiro, 1032
Yamamura, M., 1167
Yang, Kyu Hwan, 748
Yauk, Yar-Khing, 39
Yokoyama, Mitsuhiro, 51
Yoneda, Yukio, 510
Yoo, Byung Sun, 748
Yoshida, Michiteru, 334
Yoshimi, Hiroki, 1068
Yoshimura, Hidetoshi, 779
Young, George Pei Herng, 1025
Young, John Ding-E, 1025
Yumoto, Noboru, 1236
Yun, Mitsutoshi, 1209

Zaton, Ana, 904
Zbinden, Irène, 59
Zetter, B. R., 347
Zhang, Hong, 832
Zimmermann, Richard, 498

Acher, Roger, 346
Adrian, Thomas E., 489
Agostinelli, Enzo, 66
Ahmed, Salah, 443
Ailhaud, Gérard, 982
Akanuma, Yasuo, 1204
Alexandre, Adolfo, 727
Alexandrova, Evdokia A., 918
Alhenc-Gelas, François, 1160
Ametani, Akio, 876
Amthauer, Rodolfo, 752
Ananthanarayanan, V. S., 380
Andersen, Per Heden, 171
Antony, A., 118
Aoki, Shitomi, 219
Apostolopoulos, Jim J., 997
Arisawa, Mikio, 227
Arita, Hitoshi, 1075
Arzuza, O., 27
Asano, Tomoichiro, 1204
Audemard, Etienne, 564
Avila, Jesús, 660
Aviram, Michael, 572
Aylagas, H., 803
Azzi, Angelo, 694, 1260

Bachrach, L. K., 861
Baggio, Giovanella, 73
Baggiolini, Marco, 1273
Bailon, Pascal, 372
Baldassare, Joseph J., 351
Balduini, Carlo L., 258
Balduini, Cesare, 258
Baliga, B. Surendra, 278
Ballin, M., 832
Balsinde, Jesús, 502
Baricordi, Roberto, 712
Baudin, B., 1144
Baule, Valerie J., 1054
Baumann, F. Ch., 1144
Baumgold, Jesse, 1137
Baussant, Thierry, 1160
Bazile, Didier, 252
Beattie, Marlyne, 818
Beckman, Barbara S., 773
Behrens, U. J., 584
Bell, J., 306
Bellet, Dominique, 626
Beltchev, Beltcho G., 918
Benahmed, M., 1222
Bennett, Carl D., 1323
Benton, Hilary P., 421
Bertolino, Giampiera, 258
Bessman, Samuel P., 450
Bettendorff, Lucien, 942
Bidart, Jean-Michel, 626
Billheimer, Jeffrey T., 476
Bisio, Antonella, 258
Biunno, Ida, 550
Bodley, James W., 404
Bohuon, Claude, 626
Bojanovski, Marina, 73
Bolli, Peter, 380
Borowitz, Stephen M., 278
Bouhnik, Jacob, 1160
Bowlin, Terry L., 741
Boyer, Paul D., 854
Bradbury, Alan F., 1293
Brajtburg, Janina, 954
Bramucci, Massimo, 358
Brewer, H. Bryan, Jr., 73
Bronson, Roderick T., 1130
Brookins, Jesse, 773
Burón, M. I., 1029
Burrow, G. N., 861
Burrows, Jim, 205
Burton-Wurster, Nancy, 1088
Buzko, Ellen, 151

Cabañas, Carlos, 641
Cairo, Gaetano, 550
Calviello, Gabriella, 1
Cano, Ernesto, 1232
Cantau, Bernard, 213
Capasso, Antonio, 758
Cardin, Alan D., 741
Carr, R. Keith, 1003
Catt, Kevin J., 398
Cavallini, Giorgio, 712
Cavallini, Lucia, 727
Cavero, Icilio, 620
Changaris, David G., 1122
Chap, Hugues, 633
Charpentier, B., 1301
Chauvet, Jacqueline, 346
Chauvet, Marie-Thérèse, 346
Chauvin, M. A., 1222
Cheung, Donald W., 411
Chevillard, Claude, 213
Chiba, Hideo, 902
Chiesi, Michele, 1
Cho, Michael, 205
Claassen, Dale E., 194
Clerc, Josiane, 179
Cocco, Lucio, 1266
Cochet, C., 1222
Colantuoni, V., 1174
Concha, Margarita, 752
Cook, Richard, 358
Cooper, Denise R., 1345
Cornwell, Gibbons G., III, 648
Correas, Isabel, 660
Corvilain, Bernard, 1287
Corvol, Pierre, 1160
Cosgrove, Judith M., 1280
Cossarizza, A., 698
Cragoe, Edward J., Jr., 101
Crane, F. L., 1029
Cretì, Patrizia, 758
Csermely, Péter, 578
Cumiskey, Wayne R., 272
Cunningham, Thomas W., 746

Dannies, Priscilla S., 654
Dautigny, A., 1099
Davidson, Jeffrey M., 895
Davidson, Jeffrey N., 1047
Davis, Betty B., 1081
Deana, Renzo, 727
De Clercq, E., 27
de Forni, Michel, 633
De Mello, Walmor C., 509
De Petrocellis, Benita, 758
De Prisco, Pietro P., 758
Derancourt, Jean, 564
Dhalla, Naranjan S., 245
Diez, Emilio, 502
Doi, Mitsunobu, 199
Dolenc, I., 765
Domin, Barbara A., 825
Dousset, Nicole, 633
Douste-Blazy, Louis, 633
Drake, Richard L., 1081
Drouet, L., 1144
Dufau, Maria L., 151
Dumont, Jacques E., 1287
Durban, Egon, 358
Durieux, C., 1301

Eggo, M. C., 861
Eguchi, C., 847
Eisenstark, A., 392
Elberg, Svetlana, 954
Elseviers, M., 515
Erdös, Ervin G., 1323
Escande, Denis, 620
Esposito, C., 735
Estévez, A., 1029
Eto, Y., 948

Faraonio, R., 1174
Farese, Robert V., 1345
Farrar, William L., 991
Feelisch, Martin, 236
Feigenbaum, Pamela, 298
Felix, C. C., 781
Felix, J. M., 1099

Fernandez, Peter, 380
Ferraz, V. L., 934
Ferris, Douglas K., 991
Fetzer, Sharon, 789
Fisher, Gary J., 351
Fisher, James W., 773
Fishman, Peter H., 1137
Fiskum, G., 934
Flückiger, Rudy, 1330
Foglietti, Marie-José, 626
Fojo, Silvia S., 73
Foster, Judith Ann, 1054
Fox, Brian G., 165
Franceschi, C., 698
Frick, Lloyd W., 124
Fujii, Nobutaka, 146
Fujii-Kuriyama, Yoshiaki, 1024
Fujimoto, Shigeyoshi, 1034
Fujita, Kiyoshi, 902
Fujita, Takuo, 146
Fukase, Masaaki, 146
Fukumoto, Seiji, 1182
Furman, Phillip A., 124

Gabelli, Carlo, 73
Galbraith, Richard A., 1167
Galdieri, M., 1174
Galietta, L. J. V., 719
Gallop, Paul M., 1330
Gammeltoft, Steen, 1018
Gandini, Enrico, 712
Garcia, Maria L., 298
García-Villalón, D., 27
Gauthier, Eric, 954
Gautier, Claudie, 252
Geelen, Math J. H., 682
Giacomelli, Filiberto, 455
Giartosio, Anna, 66
Gil-Fernández, C., 27
Gilmour, R. Stewart, 1266
Giudicelli, Yves, 1151
Goldenring, James R., 489
Gomez, D. E., 832
Gómez-Cambronero, Julian, 1232
Goto, A., 847
Grazia Sacco, Maria, 550
Gregg, Richard E., 73
Grizzle, William E., 138
Grote, Carolyn, 387
Gruda, Ilona, 954
Guerrero, Karen J., 854
Guzmán, Manuel, 682

Hadcock, John R., 676
Hägeli, Gabrielle, 1107
Hagiwara, Hiromi, 1003
Hanasaki, Kohji, 1075
Hansson, Vidar, 705
Harris, Alex L., 272
Harvey, Ronald G., 789
Hatanaka, Masakazu, 1061
Heimberger, A., 392
Henderson, Patricia A., 351
Higashihara, Masaaki, 928
Highsmith, Robert F., 591
Higuchi, Kayoko, 73
Hinterstoisser, Barbara, 839
Hintz, R. L., 861
Hirafuji, Masahiko, 910
Hiraga, Koichi, 292
Hirai, Yoshikatsu, 1189
Hirashima, Naohide, 85
Hirata, Y., 868
Hiscott, John, 1338
Hitomi, Kiyotaka, 902
Hla, Timothy T., 1010
Höer, Dieter, 668
Hoerner, M., 584
Hollister, Alan S., 1003
Honjo, Tasuku, 265
Horai, Satoshi, 1240
Hornicek, Francis J., 606
Howcroft, Thomas K., 1280
Howlett, Geoffrey J., 997
Hulmes, Jeffrey D., 372
Humphries, Donald E., 365

Ichiba, Shigemoto, 902
Igarashi, Tetsuya, 1182
Iiri, Taroh, 9
Ikebe, Mitsuo, 928
Imura, Hiroo, 902
Inagaki, Chiyoko, 108
Inagami, Tadashi, 1003
Inoue, K., 80
Inoue, Masatoshi, 199
Irvine, Robin F., 1266
Ishida, Toshimasa, 199
Ishiguro, T., 847
Ishii, M., 847
Isobe, Ryuichi, 1248
Ito, Katsuaki, 219
Iwamoto, Yukihide, 483
Iwashima, Akio, 339
Izumi, Shun-Ichiro, 398

Jahnsen, Tore, 705
Johansson, Björn, 648
Johnson, Dave F., 455
Johnson, Kent J., 746
Jollès, P., 1099
Juhl, Henning, 171

Kaczorowski, Gregory J., 298
Kalyanaraman, B., 781
Kamath, Ajith V., 537
Kameyama, Asako, 1067
Kaminogawa, Shuichi, 876
Kanazawa, Yasunori, 1204
Kaneta, Mayumi, 1189
Kaper, J. M., 318
Kasahara, Tadashi, 187
Kashiwayanagi, Makoto, 437
Kasuga, Masato, 1204
Kato, Hiroyuki, 959
Kato, Y., 80
Kawai, Sadaaki, 959
Kawai, Tadashi, 187
Kelm, Malte, 236
Kemp, Robert G., 113
Keramidas, M., 1222
Kiefer, Doriann, 272
Kikuchi, Akira, 1314
Kim, Soon Mi, 876
Kirino, Yutaka, 85
Kitagawa, Kouichiro, 339
Klempner, M. S., 1308
Knipp, Michael A., 351
Kobayashi, Tomoko, 883
Koch, Alisa E., 205
Kohno, Kimitoshi, 483
Koiwai, Osamu, 91
Kojima, Itaru, 9
Komori, Yumiko, 613
Korytowski, W., 781
Kos, J., 765
Krauskopf, Manuel, 752
Krenitsky, Thomas A., 124
Krizaj, I., 765
Krstenansky, John L., 741
Kumagai, S., 868
Kumar, Ajit, 1010
Kume, Akihiro, 292
Kuo, Tuan H., 455
Kure, Shigeo, 292
Kurihara, Kenzo, 437
Kurosumi, K., 80
Kuwahara, June, 522
Kwiatkowska, Danuta, 113
Kwiatkowski, Ariane, 668

Labonia, Néstor, 1260
Lacal, Pedro, 641
Lacka, K., 130
Larsen, Barbara S., 476
Larsen, Jacques, 550
La Scala, Mary J., 997
Lasker, J. M., 584
Law, Greg J., 654
LeBel, Denis, 818
LeBreton, Pierre R., 789
Lee, Kwang Ho, 265

Lee, N. M., 688
Legrand, Y., 1144
Leguern, Sylvain, 620
Leibovich, S. Joseph, 205
Leipold, Harry R., 1088
Lenarčič, B., 765
Lepore, Rhonda E., 272
Lespine, Anne, 633
Levy, Finn Olav, 705
Levy, Robert S., 1122
Lewínski, Andrzej, 417
Lian, L. Y., 1253
Lieber, C. S., 584
Lin, Yao-Zhong, 497
Lindquist, Richard R., 1280
Lipscomb, John D., 165
Liu, Ji-min, 895
Liu, Ming-Cheh, 1094
Liu, Y. C., 80
Lo, Hilda K., 606
Loh, H. H., 688
Lu, Renne C., 1130
Lučovnik, P., 765
Lust, George, 1088

Macedo, D. V., 934
Maeda, Sakan, 1061
Maeyama, Kazutaka, 910
Magge, Subu, 1081
Mahoney, Charles W., 694
Mahony, William B., 825
Maines, Mahin D., 285
Makino, Naoki, 245
Malavé, Pedro, 47
Malbon, Craig C., 676
Maley, Julie A., 1047
Malinin, George I., 606
Malinin, Theodore I., 606
Malorni, A., 735
Manzoli, Francesco A., 1266
Maridonneau-Parini, Isabelle, 179
Marino, G., 735
Martelli, Alberto M., 1266
Martensen, Todd, 991
Martin, George R., 483
Mathieu, Marie-Noëlle, 213
Mathieu-Mahul, Danièle, 550
Matoba, Ryoji, 101
Matsuda, Fumihiko, 265
Matsumoto, Saichi, 1075
Matsumoto, Toshio, 1182
Matsushiro, Aizo, 890
Mazzilli, Cristina, 712
McClarty, G. A., 975
McGill, Manley, 387
McLaughlin, Jerry D., 1041
McLean, Larry R., 387
McLean, Patricia, 443
Medoff, Gerald, 954
Meijer, Piet, 1114
Metafora, S., 735
Michaud, Annie, 1160
Miedel, May C., 372
Mihara, Koichiro, 1061
Miller, Craig C., 967
Miler, James J., 1122
Miller, Stephen P., 404
Minakami, Shigeki, 1248
Mirö-Obradors, M. J., 803
Missbichler, Albert, 839
Mitchell, Martin J., 559
Mizuno, Keiko, 1189
Modlin, Irvin M., 489
Mogilevsky, William S., 1212
Mollinedo, Faustino, 502, 641, 1232
Mondovì, Bruno, 66
Montejo de Garcini, Esteban, 660
Monti, D., 698
Morán, Oscar, 47
Morera, A. M., 1222
Morisawa, Keiko, 1034
Morita, Akimichi, 91
Morita, Takashi, 890
Mornet, Dominique, 564
Morris, Howard R., 476
Motokura, Toru, 1182
Mucenski, Cathleen G., 1081
Mukaida, Naofumi, 187
Mukerji, S. K., 39
Müller, Michele, 1260
Murata, Keiko, 890
Murphy, Alexander J., 462

Nachmias, Vivianne T., 101
Nagasawa, Toru, 522
Nair, Govindan P., 1345
Nakagawa, Hachiro, 796
Nakai, Masamichi, 146
Nakai, Satoru, 1189
Nakajima, K., 868
Nakamura, Shun-ichi, 883
Nakanishi, Hiroyuki, 1314
Nakano, Tohru, 1075
Nakayama, Takashi, 1067
Navas, P., 1029
Nellen, Wolfgang, 54
Nelson, Donald J., 124
Nelson, Robert D., 809
Nemeth, Valeria, 1130
Newman, Robert A., 1041
Nicholas, Kevin R., 529
Nichols, James S., 544
Nielsen, Finn C., 1018
Nieto, Amelia, 660
Nikai, Toshiaki, 613
Nishihara, Marie, 151
Nishikimi, Morimitsu, 1240
Nishimoto, Ikuo, 9
Nishino, Hoyoku, 339
Noack, Eike, 236
Nobile, M., 719
Noda, Toshiharu, 146
Nonaka, Ikuya, 1240
Nozaki, Masami, 890
Nussbaum, J. L., 1099

Oberdisse, Eckard, 668
Oddsdottir, Margret, 489
Odell, Gerard B., 1212
Ogata, Etsuro, 9, 1182
Ogawa, Masaharu, 1034
Ogiso, Yuko, 339
Ognibene, Andrea, 1266
Ogura, Yasumi, 910
Ohno, Kinji, 1240
Ohyanagi, Harumasa, 1314
Oka, Yoshitomo, 1204
Okada, Masato, 796
Okuno, Yoshiaki, 902
Onoyama, Hirohiko, 1314
Osada, J., 803
Øyen, Ole, 705
Ozawa, Takayuki, 1240

Pachter, Jonathan A., 654
Pal, Nandita, 450
Palacios-Alaiz, E., 803
Pan, Yu-Ching E., 372
Paoletti, Jacques, 252
Parisi, Elio, 758
Pasquier, Yves-Noël, 1151
Paz, Mercedes A., 1330
Pecquery, René, 1151
Pellegrini, Antonio, 1107
Pepermans, H., 515
Perret, Bertrand, 633
Peschek, Günter A., 839
Pham, H., 1301
Pham-Dinh, D., 1099
Pietrangelo, A., 698
Pillion, Dennis J., 138
Pimstone, N. R., 39
Pineau, Bernard, 839
Piper, Hans-Michael, 236
Polla, Barbara S., 179
Pollak, M. N., 326
Pollet, Robert J., 1345
Polverini, Peter J., 205
Polychronakos, C., 326
Porta, R., 735
Pozzan, Tullio, 712

Pradines-Figueres, Anne, 982
Princen, Hans M. G., 1114
Pucci, P., 735
Puisieux, Alain, 626
Pulido, Rafael, 641

Radin, Norman S., 1197
Raju, Satyanarayana G., 537
Ramwell, Peter W., 332
Raptis, L., 306
Reese, David H., 606
Requena, Jaime, 47
Resch, Klaus, 578
Richard, M., 326
Richelsen, Bjørn, 171
Romeyn, G. J., 33
Rommerts, Focko F. G., 60
Roques, B. P., 1301
Rosenbaum, James T., 429
Rosenfeld, Ron, 9
Rosenthal, Walter, 20, 668
Rouillé, Yves, 346
Roussel, G., 1099
Roy, S., 688
Rubin, Richard M., 429
Rubtsov, Alexander M., 462

Sack, Elizabeth, 312
Sacks, Peter G., 1041
Sada, Kiyonao, 883
Saito, Yoshiro, 85
Saitoh, Yoichi, 1314
Sakaguchi, Kazushige, 146
Sakai, Keiko, 883
Sakakibara, S., 868
Sánchez-Crespo, Mariano, 1232
Sánchez-Madrid, Francisco, 641
Sandberg, Mårten, 705
Sano, Akira, 1197
Sasaki, Ryuzo, 902
Sato, Takayuki, 265
Sato, Wataru, 1240
Saur, Uschi, 54
Savabi, Fatemeh, 469
Savoie, Françoise, 1160
Schilling, James W., 1323
Schoffeniels, Ernest, 942
Schrader, Jürgen, 236
Schultz, Günter, 20, 668
Schutgens, R. B. H., 33
Schwaller, Roland, 1
Schwartz, Arnold, 591
Schwartz, M. A., 1308
Schächtele, Christoph, 20
Seib, Christine, 668
Seifert, Roland, 20
Selvatici, Rita, 712
Shibasaki, Yoshikazu, 1204
Shin, Euy Kyun, 265
Shiroya, Tsutomu, 108
Shoji, Takayuki, 437
Siegall, Clay B., 1010
Siegel, Frank L., 1212
Silberstein, Edward B., 387
Silbert, Jeremiah E., 365
Silver, Paul J., 272
Sinha, C. C., 832
Sinigaglia, Fabiola, 258
Skidgel, Randal A., 1323
Sletten, Knut, 648
Smith, Stan L., 559
Smyth, Derek G., 1293
Sochor, Milena, 443
Somogyi, János, 578
Spahr, Rolf, 236
Spooner, Brian S., 194
Srinivasan, P. R., 975
St. Clair, Marty H., 124
Standaert, Mary L., 1345
Steger, G., 318
Stojilkovic, Stanko S., 398
Streydio, C., 130
Styrt, B., 1308
Sugihara, Hisayoshi, 613
Sugimoto, T., 847
Sugiura, Yukio, 522
Sugiyama, Taketoshi, 1061
Suiko, Masahito, 1094
Sumimoto, Hideki, 1248
Suzuki, Hiroshi, 1240
Swillens, S., 130
Szamel, Marta, 578

Tabarés, E., 27
Tabidi, Ikhlas, 443
Tada, Keiya, 292
Tada, Y., 948
Tager, J. M., 33
Takahashi, Rei, 1061
Takahashi, Shunji, 1182
Takahashi, Takayuki, 902
Takai, Yoshimi, 1314
Takaku, Fumimaro, 1204
Takamiya, Mari, 227
Takata, S., 868
Takekoshi, Susumu, 1024
Takenawa, Tadaomi, 959
Takeyama, Yoshifumi, 1314
Talor, Zvi, 312
Tam, James P., 497
Tan, Fulong, 1323
Tanaka, Masashi, 1240
Tanaka, S., 80
Tanaka, Toshiki, 199
Tanaka, Yukie, 883
Taniguchi, Taketoshi, 1034
Tasaka, Keiichi, 398
Tasaki, Kenzabu, 789
Tate, Suresh S., 1167
Tatum, Susan M., 1280
Thomas, George, 332
Thompson, Peter, 380
Thorgeirsson, U. P., 832
Thuringer, Dominique, 620
Timmins, P. A., 1144
Tonin, P. N., 975
Torrelio, B. Marina, 1330
Torti, Mauro, 258
Tourwé, D., 515
Tousignant, M. E., 318
Trakshel, G. Michael, 285
Triggle, Chris, 380
Troalen, Frédéric, 626
Turk, V., 765
Tyler, Jenny A., 421

Ueda, Hitoshi, 199
Ueno, Munehisa, 773
Uesugi, Seiichi, 199
Umeda, Yukio, 227
Urano, Shigeyuki, 789

Vaidyanathan, C. S., 537
Vaishnav, Y. N., 118
van Amerongen, Aart, 60
Van Binst, G., 515
van den Bosch, H., 33
Van Der Auwera, L., 515
Vannier, Christian, 982
van Noort, Marjolein, 60
van Roermund, C. W. T., 33
Van Sande, Jacqueline, 1287
Vasdev, Sudesh, 380
Vassart, G., 130
Ventura, E., 698
Vercesi, A. E., 934
Vezzoni, Paolo, 550
Villa, Anna, 550
Villalba, J. M., 1029
Villanueva, Julieta, 752
Vittet, Daniel, 213
von Fellenberg, Roland, 1107

Walker, Blair A. M., 746
Wanders, R. J. A., 33
Ward, Peter A., 746
Wassermann, Karsten, 1041
Watanabe, Keiichi, 1024
Watanabe, T. X., 868
Watanabe, Takehiko, 910
Watanabe, Toshiki, 1182
Waterman, Michael R., 151
Weber, David V., 372

Weerasinghe, Deepthi K., 1323
Westermark, Per, 648
Whitfield, J. F., 306
Whitmer, Kyra R., 591
Wiener, Joseph, 455
Willet-Brown, Jami, 991
Williams-Lawson, Judith S., 591
Wins, Pierre, 942
Winters, Christine A., 151
Wirtz, Karel W. A., 60
Wiseman, Jeffrey S., 544
Wohlrab, Harmut, 1130
Wolf, Marlene, 1273
Wright, Clifford D., 809
Wright, J. A., 975
Xanthoudakis, Steven, 1338
Yagisawa, Hitoshi, 187
Yamada, Hideaki, 522
Yamada, K., 847
Yamada, Yoshihiko, 483
Yamamoto, Hiroshi, 1034
Yamamoto, Masahiko, 1240
Yamamura, Hirohei, 883
Yamaoka, Atsushi, 1248
Yamasaki, Ryohei, 159
Yamauchi, Kunio, 876
Yang, Maria, 138
Ye, Yuang-kang, 497
Yoneda, Makoto, 1240
Yoshida, Ken-ichi, 101
Yoshimi, H., 868
Yoshimura, Shinichi, 1024
Yoshioka, M., 847
Yoshizaki, Hiroyuki, 227
Yousefi, S., 326
Yuan, Xiao-Hua, 113
Zdon, Michael J., 489
Żerek-Meĺén, Gabriela, 417
Zhao, Dayuan, 245
Zhu, Y. X., 688
Ziboh, Vincent A., 967
Zimmerman, Thomas P., 825
Zoccarato, Franco, 727
Zucker, Karl A., 489
Zwelling, Leonard A., 1041

Volume 155

Aarden, L. A., 112
Abe, Youichi, 1452
Aburaya, Masahito, 740
Aizawa, Toru, 569
Akanuma, Yasuo, 283
Akiyama, Hiroyuki, 914
Alfaro, Sharon R., 463
Alhonen, Leena, 373
Antony, A., 1381
Aoyama, Yuri, 317
Arai, Motoo, 487
Araki, Shukuro, 554, 1366
Archer, Michael C., 14
Arimura, Hirofumi, 24
Armaroli, Stefania, 1145
Armstrong, D. T., 144
Asai, Tsuyoshi, 863
Asaoka, Yoshinori, 1387
Asem, Elikplimi K., 761
Astle, M. C., 1478
Atkinson, Paul R., 1187
Audemard, Etienne, 808
Aviram, Michael, 709
Aykent, Serdar, 518
Azhar, Salman, 1017
Baba, Masanori, 1404
Baba, Shigeaki, 914
Baeyens, Dennis A., 1437
Ballou, Leslie R., 823
Balzarini, Jan, 1404
Bamburg, J. R., 890
Banga, Harjit Singh, 263
Baracca, Allessandra, 130
Barbet, Jacques, 794
Bardin, C. Wayne, 398
Baricos, William H., 1318
Barlow, Tamara, 747
Barr, Rita, 576
Basbaum, Carol B., 857
Bateman, Andrew, 524
Bayley, Peter, 1464
Becker, David, 405
Becker, E. L., 189
Belsham, Denise, 907
Benali, Rachid, 857
Berenson, G. S., 615
Bergin, Linda, 1082
Bernadou, A., 418
Bertrand, O., 418
Bhattacharyya, Monica V., 685
Bianchi, Marzia, 423
Bianchini, E., 943
Bird, Thomas G., 344
Bishop, Bruce F., 518
Blick, Mark, 692
Boado, Ruben J., 1297
Boman, Bruce M., 463
Bose, Sarojini G., 436
Boudjada, Taha, 83
Boylan, Michael, 351
Boynton, Alton L., 767
Braford, Sarah R., 518
Brahmi, Zacharie, 597
Brakier-Gingras, Léa, 449
Branca, D., 978
Bretner, Maria, 1418
Brockerhoff, Hans, 18
Brodsky, Jeffrey L., 685
Brown, Patricia J., 603
Brulfert, Jeanne, 835
Bull, Arthur W., 1374
Burykin, B. N., 1255
Butte, John, 1017
Butterfield, J., 1033
Caen, J. P., 418
Camp, R. D. R., 1154
Campbell, David A., 1297
Caraty, A., 841
Carlos Monge, Juan, 216
Carson, Dennis A., 834
Carter, Christopher A., 1261
Cashman, John R., 38
Castelluccio, Cinzia, 1145
Chambon, P., 943
Chang, C., 971
Chang, Chun-Chang, 870
Charnay, Patrick, 1213
Charness, Michael E., 138
Chauhan, Ved P. S., 18
Chen, Ching-Ling C., 398
Chen, S. W., 984
Cheng, C. Yan, 398
Cheng, K.-C., 622
Cheng, Linda, 74
Cheung, Wai Yiu, 823
Chol Han, Doo, 100
Chopra, Inder J., 1297
Christensen, Mark E., 1278
Christian, Anna-Luise, 1051
Christopher, M. M., 1033
Chuang, Lea-Yea, 870
Chundu, K., 173
Chung, N., 144
Cieśla, Jarosław M., 1418
Cieśla, Joanna, 1418
Clinton, M., 539
Coles, Peter J., 1201
Contarini, Alberto, 1145
Cook, Dorn C., 1075
Copp, Leslie J., 1201
Cortez, Shirley L., 1318
Coy, David H., 359
Crane, Frederick L., 576
Crimmins, Daniel L., 1353
Crystal, R. G., 634

Curiel, D., 634
Cuthill, Scott, 801

Dantzig, Anne H., 1082
Daoud, E. W., 890
Datta, Debjani, 493
Davis, R. E., 443
DeBold, C. Rowan, 895
Deckelbaum, Richard J., 709
De Clercq, Erik, 1404
de Groot, Herbert, 278
Deguchi, Yasuhiro, 295
del Senno, L., 943
Denis, Marc, 801
DePaoli-Roach, Anna A., 52
Deshpande, V. V., 270
Devaskar, S., 173
Diaspro, A., 1396
Diddens, Heyke, 754
D'Incalci, Maurizio, 1221
Diven, Warren F., 7
Dokas, Linda A., 1207
Donner, Ludvik, 692
Donohue, Terrence M., Jr., 1471
Dunn, Peter E., 1060
Dzik, Jolanta M., 1418

Eales, Susan J., 530
Eanes, E. David, 608
Eaton, J. W., 1033
Echevarría, Cristina, 835
Edward, Michael, 773
Eichler, Duane C., 530
Ellenberger, Thomas E., 656
Ensign, W. Y., Jr., 984
Esch, Fred, 524
Escribano, Julio, 1424
Evangelopoulos, Athanasios E., 1126
Exner, T., 1001
Eyerman, Margaret C., 1353

Farhat, Michel Y., 118
Farndale, R. W., 1478
Fato, Romana, 1145
Faulstich, Heinz, 962
Fawell, Stephen E., 59
Feig, Andrew L., 338
Feinstein, Maurice B., 263
Feng, Zong-Ming, 398
Fernández de Recondo, Marta E., 216
Ferrell, Robert E., 692
Ferri, Stefano R., 351
Fincham, N. J., 1154
Floreani, Marco, 576
Florio, Tullio, 1089, 1097
Fok, Kam F., 591
Fong, Wang-Fun, 937
Fox, Keith R., 779
Frants, R. R., 634
Fraser, Blair A., 344
Frese, Gerd, 754
Fuchs, Sara, 930
Fujii, Ritsuko, 366
Fujii, Yuko, 100
Fujisawa, Yoshihide, 1452
Fukata, Junichi, 1459
Fukazawa, Hideo, 1119
Fukuda, Yuka, 167
Fukui, Kiyoshi, 1452
Furihata, Chie, 670
Fuxa, Kathleen P., 1278

Gadal, Pierre, 835
Gaikwad, S. M., 270
Gal, Vera, 1464
Geahlen, Robert L., 52
Gekeler, Volker, 754
Geng, Chaoxian, 1060
Gennis, Robert B., 243
Gibson, Beverly L., 591
Glasier, M. A., 144
Glenner, George G., 608
Goddard, M. K., 984
Godet, Jacqueline, 1213
Godfrey, Philip P., 664
Gold, Jean A., 773
Goldin, Stanley M., 656
Goldstein, Gary, 857
Gonzalez-Brito, Aldo, 209
Goto, K., 289
Goto, Sataro, 1266
Goto, Tamotsu, 429
Grant, Michael, 877
Grimaldi, Maurizio, 1089, 1097
Grino, M., 841
Grisham, Charles M., 236
Grubb, Anders, 1424
Gschwind, Charles, 1105
Guerrero, Juan M., 209
Gupta, Sunil K., 263
Gustafsson, Jan-Ake, 801

Habraken, Yvette, 1261
Hamamoto, Yoshiaki, 1346
Hamasaki, Takashi, 305
Hammond, R., 443
Harricane, Marie-Cécile, 808
Harrison, Marietta L., 52
Harrison, R. A. P., 901
Hart, Ronald W., 996
Hashimoto, Yuichi, 503
Hasui, Kouichi, 1452
Hatanaka, Ritsuko, 317
Hayashi, Kyozo, 366
Hayden, S. M., 890
Hayes, Dora K., 344
Hazenberg, B. P. C., 112
Heeren, Robert A., 518
Hegazy, Mohammed G., 45, 1207
Heinrich, Gerhard, 482
Heisler, Seymour, 83
Henteleff, Mark, 138
Hersh, Evan M., 1105
Higaki, Jitsuo, 1244
Hinohara, Yoshikazu, 670
Hirashima, Shoji, 1346
Hirata, Masato, 1173
Hirata, Yukio, 167
Hiroshima, O., 289
Hiskey, Richard G., 230
Hofert, John F., 1471
Hofker, M. H., 634
Holzbaur, Erika L. F., 626
Hong, Waun K., 692
Horecker, B. L., 539
Hori, Hitoshi, 1066
Hornebeck, W., 786
Hortin, Glen L., 591
Hosoi, Toshiko, 24
Houzawa, Shigenari, 106
Huang, Kuo-Ping, 1311
Huflejt, Margaret, 123
Hughes, James P., 1187
Husak, M., 1033

Ichihara, Chikako, 300
Ichihara, Shigeyasu, 1119
Ichihara, Yoshikazu, 670
Ichinose, Masao, 670
Ii, Masayuki, 720
Ikebe, Tetsuro, 1173
Imajo, Seiichi, 317
Imajoh, Shinobu, 546
Imamura, Toru, 583
Imura, Hiroo, 1459
Inagaki, Taisuke, 300
Inayama, Seiichi, 1066
Ince, Christine, 692
Ishibashi, Shun, 283
Ishida, Nobuhiro, 317
Ishiguro, Masaji, 317
Ishihara, Takeshi, 670
Ishikawa, Eiji, 224
Ishikawa, T., 289
Ishimatsu, Toyohiro, 1173
Ishizu, Kazuhiko, 1046
Ishizuka, Tatsuo, 643
Iwao, Hiroshi, 1452
Izutsu, K. T., 984
Izutsu, S. M., 984

Jacobs, M., 1478
Jacquot, Jacky, 857
Jaffe, Howard, 344
Jagarlapudi, S., 1033
Jan Kempen, Herman, 850
Jänne, Juhani, 373
Jean, Fréderic, 794
Jennings, Michael J., 518
Johnson, D. E., 984
Jones, Christopher S., 1201

Kagechika, Hiroyuki, 503
Kageyama, Takashi, 670
Kagimoto, Keiko, 379
Kagimoto, Masaaki, 379
Kamiyasu, Koumei, 863
Kanazawa, Yasunori, 283
Kaneko, Yoshiyasu, 305
Kanety, Hannah, 930
Kangawa, Kenji, 726, 733, 740, 1330, 1338
Kannan, K., 411
Kanter, Peter, 324
Kasuga, Masato, 1181
Kauffman, F. C., 455
Kaufman, Morris, 907
Kawachi, Emiko, 503
Kawakami, Yoshikazu, 160
Kawamura, Masaru, 1237
Kawasaki, Toshisuke, 720
Keiser, Harry R., 118
Kennedy, S. P., 189
Kerry, J. A., 714
Khalil, M. W., 144
Khleskov, V. I., 1255
Kida, Noriyoshi, 366
Kikkawa, Ushio, 1387
Kikuchi, Akira, 1284
Kim, Shigekuni, 1284
Kimura, Kinuko, 1133
Kimura, Shouji, 1452
Kimura, Yuichi, 1173
King, Steven C., 656
Kirkpatrick, B., 443
Kishimoto, Susumu, 295
Kizaki, Z., 455
Klaassen, P., 181
Klasen, E. C., 634
Klein, Barbara K., 518
Klemcke, Harold G., 1187
Klemens, Mary R., 236
Kline, Ellis L., 1293
Kobayashi, Yohnosuke, 167
Kobayashi, K., 650, 1305
Kobayashi, Nobuyuki, 1346
Koch, Bernard, 83
Koga, Toshitaka, 1173
Kohama, Yasuhiro, 332
Kohno, Takeyuki, 224
Kohno, Yasuhiro, 1046
Koike, Haruhiko, 1066
Kojima, Takatsugu, 167
Kokontis, J., 971
Kokubun, Shinichiro, 882
Kolisis, Fragiskos N., 1126
Komatsu, Mitsuhisa, 569
Kondo, Takahito, 160
Konno, Kunio, 24
Kotts, Claire E., 518
Krantz, Allen, 1201
Krief, P., 418
Kuboi, H., 1305
Kulikowski, Tadeusz, 1418
Kulkarni, Arun P., 1075
Kumar, V. L., 943
Kunkel, S. L., 1230
Kusari, J., 678
Kwekkeboom, Jaap, 850

Lafuma, C., 786
Lai, C. Y., 678
Lake, Douglas, 1105
Lambert, Charles, 38
Lamy, Louis, 816
Landolfi, Elisa, 1089, 1097
Landsman, David, 66
Larreta-Garde, Véronique, 816
Larrick, J., 1230
Law, Che-Leung, 937
Lee, I.-M., 443
Lee, J. S., 692
Lee, Reiko T., 1444
Lee, Yuan C., 1444
Legorburu, Cecilia, 216
Lehman, W., 197
Le Maréchal, Pierre, 835
Lenard, John, 59
Lenaz, Giorgio, 1145
Li, H., 418
Liang, C. Tony, 74
Lima, Maria F., 256
Limburg, P. C., 112
Linnane, A. W., 714
Littauer, Andrea, 278
Locatelli, A., 841
Lu, H., 418
Ludlum, David B., 1261
Lutz-Bucher, Bernadette, 83
Lynch, J. P., III, 1230

MacKenzie, Robert E., 1
MacKie, Rona M., 773
Maeda, Shuichiro, 554, 1366
Magnani, Mauro, 423
Mahrenholz, Alan M., 52
Maier, J. A. M., 1161
Maitra, Utpalendu S., 317
Malapert, Pascale, 794
Mamrack, Mark D., 203
Mancini, Joseph A., 351
Mannironi, Cecilia, 1221
Markossian, K. A., 1430
Marnett, Lawrence J., 1374
Marshall, Aileen, 398
Marston, S. B., 197
Martin, R. Bruce, 1194
Martin, Stephen, 1464
Masaki, Tomoh, 167
Masuho, Yasuhiko, 1105
Mathis, Karl J., 518
Mathlouthi, Mohamed, 816
Matsumoto, Shigeru, 332
Matsumoto, Yoh-ichi, 1105
Matsuo, Hisayuki, 726, 733, 740, 1330, 1338
May, Felicity E. B., 1113
McCarthy, John L., 379
McCourt, David W., 1353
McDonald, Lee J., 203
Mealing, Geoffrey A. R., 761
Mehta, N., 1033
Meighen, Edward A., 351
Mejia, Narciso R., 1
Méndez, Enrique, 1424
Menefee, Judson K., 895
Menendez-Pelaez, Armando, 209
Merkler, Ingeborg, 962
Meucci, Olimpia, 1089, 1097
Meyer, Terry E., 482
Mikaelyan, M. V., 1430
Miki, Kazumasa, 670
Mikulík, Karel, 384
Milligan, Jamie R., 14
Mimura, Tsutomu, 332
Minamino, Naoto, 726, 733, 740, 1330
Minghetti, Kimberly Carter, 243
Mirshahi, Mc., 418
Mishal, Z., 418
Misra, U. K., 455
Mitsui, Youji, 583
Miura, Kiyoshi, 643
Miura, Soichiro, 106
Miyagawa, Kiyoshi, 1324
Miyata, Atsuro, 1330
Miyauchi, T., 289
Mizoguchi, Y., 650, 1305
Mizuguchi, Junichiro, 1311
Mizuno, Takakazu, 670
Mohan, Venkitachalam P., 317
Momomura, Kaoru, 1181
More, M. W., 270
Moreno, Cosme, 823
Mori, Kazutoshi, 366
Mori, Kenjiro, 1459

Mori, Natsuko, 283
Morisawa, S., 650
Morlé, Françcccois, 1213
Morley, P., 144
Mornet, Dominique, 808
Morris, Clive, 561
Moshage, H. J., 112
Motojima, Kiyoto, 1266
Mueller, Gerald C., 249
Mufson, Elizabeth E., 895
Mukai, Kazuo, 1046
Muller-Eberhard, U., 622
Murakami, Tatsufumi, 554
Murao, Sawao, 487
Murase, Toshio, 283
Mutai, Mamoru, 670
Myers, Adam K., 118

Nagao, Seiji, 643
Nagasawa, Toru, 1008
Nahm, Moon H., 1353
Naitoh, Yoshiyuki, 1459
Nakabayashi, Hiroki, 1311
Nakai, Yoshikatsu, 1459
Nakamaru, Mitsuaki, 1244
Nakamoto, Stuart S., 767
Nakamura, Kenji D., 996
Nakano, Yoshio, 1133
Nakayama, Toshifumi, 305
Nakazato, Hiroshi, 317
Nalbandyan, R. M., 1430
Nandi, Dhirendra L., 1248
Natori, Shunji, 1346
Needleman, Philip, 990
Negoro, Shigeru, 295
Nelen, M., 634
Nes, W. David, 509
Ng, David S., 311
Nicolini, C., 1396
Nishiguchi, Seiji, 554, 1366
Nishihara, Tatsuro, 429
Nishizuka, Yasutomi, 1387
Noda, Munehiro, 24
Noguchi, Shunsuke, 1237
Noguchi, Teruhisa, 317
Nozawa, Yoshinori, 643
Nukiwa, T., 634

Obrecht, J. P., 1139
O'Brian, Catherine A., 1374
Obrist, R., 1139
O'Connor, Sally E., 1318
Ogasawara, Eileen M., 767
Ogawa, Tadashi, 863
Ogihara, Toshio, 1244
Ohishi, Nobuko, 300
Ohnishi, Shuji, 554
Ohno, Shigeo, 1311
Ohta, Mitsuhiro, 366
Ohta, Toshiko, 1237
Ohtsubo, Michihiro, 1237
Ohtsuka, Yoshinori, 160
Oka, Hiroshi, 305, 332, 670
Oka, Yoshitomo, 283
Okabe, Masaru, 332
Oliver, C., 841
Onji, Toyoshi, 91
Orth, David N., 895
Oshima, Takehiro, 317
Oshio, Chikara, 106
Oshtrakh, M. I., 1255
Ouellette, Michel, 449
Oyama, Yoshiaki, 317
Ozawa, Minoru, 100

Packer, Lester, 123
Paitian, N. A., 1430
Panneerselvam, C., 539
Parenti Castelli, Giovanna, 130, 1145
Pauwels, Rudi, 1404
Pawar, H. S., 411
Pedersen, Lee G., 230
Pelletier, Georges, 83
Pereira, Fred, 907
Perrot, J. Y., 418
Petersen, Eskild A., 1105
Peterson, D. A., 1033
Petřík, Theodor, 384
Picot, C., 418
Pinsky, Leonard, 907
Pisano, Michael R., 1207
Piva, R., 943
Poellinger, Lorenz, 801
Pollock, Jennifer S., 230
Polvinen, Kirsi, 373
Potier, Michel, 32
Precht, Patricia, 74
Presta, M., 1161
Princen, Hans M. G., 850
Probst, Hans, 754
Proctor, Jim, 877
Puchelle, Edith, 857
Pujade, E., 418
Pujol, J.-P., 786

Qiao, Chuang-Ling, 384
Qiao, Chun Sheng, 1213
Querimit, Lisa A., 138

Radhakrishnamurthy, B., 615
Ragnotti, G., 1161
Raikhel, Alexander S., 436
Raina, Ashok K., 344
Rakugi, Hiromi, 1244
Ranjeva, Raoul, 835
Reaven, Eve, 1017
Recondo, Eduardo F., 216
Rédini, F., 786
Redwood, C. S., 197
Reed, Donald J., 956
Reimann, Erwin M., 1207
Reiter, Russel J., 209
Remick, D. G., 1230
Rice, Peter, 561
Riegman, P. H. J., 181
Riley, Clark T., 344
Ro, Jung S., 692
Roach, Peter J., 52
Robert, L., 786
Rode, Wojciech, 1418
Rodriguez de Turco, Elena B., 151
Roelofs, H. M. J., 112
Roldan, E. R. S., 901
Romijn, J. C., 181
Rosenmann, Eduardo, 907
Rossi, Carlo Alfonso, 130
Rossi, Luigia, 423
Rougon, Geneviève, 794
Rowntree, Jeremy I., 1412
Roy, S. N., 678
Rozengurt, Enrique, 359, 561
Rubenstein, Andrew J., 1360
Rubery, P. H., 1478
Rusnati, M., 1161

Sacktor, Bertram, 74
Sahman, N., 1001
Saigusa, Akihiro, 882
Saito, A., 289
Saito, Hiroshi, 1244
Saito, Hiuga, 487
Sakagami, Y., 650, 1305
Sakamoto, Hiromi, 1324
Sakata, Jun-ichiro, 1338
Sakata, Moriyuki, 990
Sakellaris, George, 1126
Samanta, Timir B., 493
Sanghvi, Ajit, 7
Sankaran, Lakshmanan, 1038
Sano, Y., 289
Santana, Celsa, 209
Sasaki, Tsuguo, 1311
Sato, Kanji, 100
Sato, Noboru, 429
Sato, Shinkichi, 914
Satoh, Masamichi, 546
Scala, Giuseppe, 1089, 1097
Scelza, P., 1396
Schäfer, Rainer, 1051
Schettini, Gennaro, 1089, 1097
Schlender, Keith K., 45
Schmidli, J., 1139
Schols, Dominique, 1404
Schulz, Irene, 1051

Schulz, Rüdiger, 700
Schwartz, Jean-Louis, 761
Schwartz, N. B., 1271
Scott, Mitchell G., 1353
Scutari, G., 978
Seely, James E., 1187
Seetharam, Ramnath, 518
Seki, S., 650
Sekiguchi, Kazuo, 1387
Semadeni, Marco, 123
Sen, G. C., 678
Serafini, Giordano, 423
Sevilla, Michael D., 405
Sewell, B. Trevor, 66
Seyama, Yousuke, 1181
Sha'afi, R. I., 189
Shah, Sudhir V., 1318
Sharma, C., 615
Sharoyan, S. G., 1430
Shibata, Nobuhiko, 91
Shii, Kozui, 914
Shimada, Kazunori, 554, 1366
Shimada, Masako, 283
Shimano, Hitoshi, 283
Shimasaki, Shunichi, 524
Shin, Dong M., 692
Shin, T., 650
Shinzawa, Kyoko, 300
Shizume, Kazuo, 100
Shtalrid, M., 692
Shudo, Koichi, 503
Shugar, David, 1418
Shuster, Robert C., 1360
Siegel, Ned R., 518
Sigal, Elliott, 38
Sigman, David S., 338
Silverman, Richard B., 1248
Simonet, Lizette C., 392
Sinervirta, Riitta, 373
Singh, Ava, 524
Slepneva, Irina A., 1026
Smirnov, A. B., 1255
Smith, Christine E., 518
Smith, Roger A., 1201
Smith, Terry J., 1293
Soffer, R. L., 678
Solaini, Giancarlo, 130
Solomon, Samuel, 524
Soly, Robert R., 351
Sommerhoff, Christian, 857
Soria, C., 418
Soria, J., 418
Spasokukotskaja, Tatjana, 923
Spencer, Robin W., 1201
Spengler, R. N., 1230
Spitzer, Judy A., 151
Sprinson, David B., 317
Spyrou, Giannis, 923
Srinivasan, M. C., 411
Starck, Joelle, 1213
Staub, Maria, 923
Steele, Timothy A., 597
Stocchi, Vilberto, 423
Stournaras, Christos, 962
Strieter, R. M., 1230
Sudoh, Tetsuji, 726, 733
Suematsu, Makoto, 106
Sugano, Toru, 1105
Sugimura, Takashi, 1324
Sugishita, Y., 289
Sugiyama, Masako, 429
Suzuki, Hazumi, 1133
Suzuki, Koichi, 1311
Suzuki, Masayuki, 106
Sweeney, Joyce, 7

Takagi, Hiroshi, 546
Takagi, Michiko, 91
Takahashi, Hideo, 487
Takahashi, Kenji, 670
Takahashi, Takayuki, 670
Takai, Yoshimi, 1284
Takaku, Fumimaro, 283, 1181
Takanohashi, Yohko, 1119
Takasu, Nobuyuki, 569
Takauchi, Kenkichi, 863
Takeda, Kazuo, 1237
Takeda, Ken, 24
Takeuchi, Koji, 1008
Takeuchi, Sakae, 470
Takeuchi, Takuji, 470
Tamai, Sunao, 1459
Tamaki, Toshiaki, 1452
Tanaka, Kan, 487
Tanji, Masao, 670
Tarrand, Jeffrey J., 1353
Tateishi, Mitsuru, 1119
Tatematsu, Masae, 670
Tawaragi, Yasunori, 429
Tennekoon, G. I., 1271
Terada, Hiroshi, 1066
Terada, Masaaki, 1324
Teramoto, Tetsuyuki, 332
Teshima, Shinichi, 1324
Tettenborn, Connie S., 249
Thederahn, Theodore, 338
Thelen, M. P., 1478
Thomas, Craig, 877
Thomas, Daniel, 816
Thompson, David M., 877
Thurman, R. G., 455
Thysseril, Thomas J., 45
Tien, Ming, 626
Tirmenstein, Mark A., 956
Tobe, Kazuyuki, 1181
Toda, Gotaro, 305
Tokita, Yoshihito, 583
Tokumura, Akira, 863
Tomei, L. David, 324
Tominaga, Tomoko, 1459
Tomisawa, Hiroki, 1119
Topper, Yale J., 1038
Trapman, J., 181
Trudinger, B., 1001
Tsang, Benjamin K., 761
Tseng, Ching-Ming, 344
Tsuchiya, Masaharu, 106
Tsujimoto, Kazuo, 123
Tsujimoto, Masafumi, 429
Tsukagoshi, Norihiro, 300
Tsukamoto, Ayumi, 305
Tsukatani, Hiroaki, 863
Tsukuda, Masanori, 1387
Tsunetoshi, Yoshizo, 224
Tsuruoka, Nobuo, 429
Tsushima, Toshio, 100
Tsutsumi, Masakazu, 1324
Turturro, Angelo, 996
Tymms, M. J., 714

Uchida, Tetsuya, 1311
Udaka, Sigezo, 300
Ueda, Hiroshi, 546
Ueda, Shuzo, 733, 740

Vaishnav, Y. N., 1381
van der Korput, J. A. G. M., 181
Van Dyke, Knox, 476
van Leeuwen, M. A., 112
van Pelt, J. F., 112
van Voorthuizen, Eline M., 850
Varotto, M. L., 978
Vartak, H. G., 270, 411
Vaz, Cecilia A., 118
Vergani, L., 1396
Vesely, David L., 1437
Vidal, Jean, 835
Villalta, Fernando, 256
Vincenti, E., 978
Vollmar, Angelika M., 700
von Holt, Claus, 66
Votaw, Philip, 52

Wallace, Douglas C., 1360
Walters, J. Michael, 1437
Wang, Chi-Sun, 950
Ward, Nancy E., 1374
Ward, P. A., 1230
Warty, Vijay, 7
Wasson, D. Bruce, 834
Watanabe, Keiichi, 914
Waterman, Michael R., 379
Watson, M. L., 1154
Watson, S. P., 664

Watts, Anthony, 1412
Weber, David J., 230
Weiner, Lev M., 1026
Weinstein, I. Bernard, 1374
Weiss, Janet, 576
Wellner, D., 539, 622
Wenner, Charles E., 324
Westley, Bruce R., 1113
Westwick, J., 1154
Whitfield, James F., 761
Wikström, Ann-Charlotte, 801
Wildrick, David, 692
Wildrick, David M., 463
Wiley, Clayton A., 608
Wilkinson, L. E., 984
Williams, Kevin Jon, 709
Williams, Marvin T., 392
Woll, Penella J., 359
Wong, Edith Y., 518
Wong, J. L., 984
Wong, Kenneth, 311
Wrogemann, Klaus, 907
Wu, Li-Teh, 1318

Xiao, Zhangling, 823
Xu, Sihua, 509
Xu, Zu Feng, 816

Yagi, Kunio, 300
Yamada, Hideaki, 1008
Yamada, Nobuhiro, 283
Yamada, Takashi, 569
Yamaguchi, Koji, 1173
Yamamoto, Akira, 1452
Yamamoto, Hiroaki, 470
Yamamoto, Katsuhiko, 1284
Yamamoto, Naoki, 1346
Yamamoto, S., 650
Yamanaka, H., 455
Yamashina, Ikuo, 720
Yan, Mengyao, 405
Yanagisawa, Masashi, 167
Yano, I., 1305
Yap, S. H., 112
Ye, Zuguang, 476
Yokono, Koichi, 914
Yonezawa, Kazuyoshi, 914
Yoon, Tai Heon, 283
Yoshida, Teruhiko, 1324
Yoshida, Yasuyoshi, 1311
Yoshida, Yuzo, 317
Yoshihara, Yoshihiro, 546
Yoshimi, Hiroki, 167
Yuzuriha, T., 289

Zaruba, M. E., 1271
Zetterman, Rowen K., 1471
Zhang, Yao-Shi, 344
Zhu, Qinzhang, 524
Zioncheck, Thomas F., 52
Zukowska-Grojec, Zofia, 118
Zwiller, Jean, 767

Volume 156

Abe, Yumiko, 668
Abuja, Peter M., 180
Akahoshi, Tohru, 1007
Akai, Hiroaki, 701
Akers, Marjorie, 924
Aktories, Klaus, 361
Alcina, Antonio, 1360
Alexandre, Adolfo, 1316
Altekar, Wijaya, 451
Altrock, Bruce W., 733
Amiri, Iradj, 304
Anderson, W. B., 263
Anton, Elizabeth, 143
Araki, Shun-ichi, 846
Arao, Tatsuyoshi, 814
Arimura, Akira, 61
Asai, Kentaro, 563
Atlante, Anna, 978
Atlas, S., 1070
Auclair, Martine, 424
Auguet, Michel, 186

Baertschi, Alex J., 15
Baird, Andrew, 611
Balduini, Carlo L., 823
Baricordi, Roberto, 46
Barkey, Ronnie J., 776
Barlier, S., 255
Barry, Jeanne, 164
Barthe, C., 318
Bartol, Frank F., 108
Basso, D., 318
Bau, Robert, 1120, 1125
Baxter, Robert C., 199
Beavo, Joseph A., 860
Belanger, Denise M., 746
Bellelli, A., 970
Belles-Isles, M., 1000
Benedetti, Antonio, 840
Benedetti, P. L., 970
Benesch, Ruth E., 9
Benovitz, Deanne E., 125
Benson, Merrill D., 762
Bergamaschi, Stefania, 1279
Bertolino, Giampiera, 823
Bertoncello, Stefano, 1316
Bhatnagar, Deepak, 801
Bibor-Hardy, Viviane, 205
Bird, R. Curtis, 108
Birkenhäger, J. C., 588
Bisio, Antonella, 823
Blatt, Cila, 1265
Blum, W., 954
Blume, Arthur J., 1039
Blumenthal, Donald K., 860
Bockman, Richard S., 644
Born, Walter, 1187
Boyd, Michael R., 1046
Brady, Stephen F., 297
Braquet, Pierre, 186
Brengle, Blair, 511
Brockway, Martine J., 116
Brown, B. L., 1411
Brown, T. J., 1411
Brownell, Jay, 1046
Bruening, George, 340
Brunori, M., 970
Bullock, D. W., 1368
Burgos, Jesus, 611
Burgoyne, Leigh A., 222
Burton, Andrew A., 801
Buzayan, Jamal M., 340

Calvo, Juan C., 776
Canonico, Peter G., 1046
Cantrell, Doreen A., 328
Carrayol, Elisa, 1130
Caughey, Winslow S., 752
Célier, Chantal, 282
Chabot, J. G., 1000
Chabrier, Pierre-Etienne, 186
Chandrasekaran, S., 411
Chang, Jui-Yoa, 1187
Chang, Kwen-Jen, 1250
Chang, S. H., 537
Chantry, David, 830
Chapman, M. John, 1293
Charbonneau, Harry, 860
Charron, Dominique, 1209
Chen, Ding-Shinn, 1287
Chen, Shiuan, 445
Chock, Stephen P., 1308
Choi, Hok-Kin, 1120, 1125
Chopra, Arvind, 1403
Chuang, Lee-Ming, 1287
Chytil, Frank, 712
Ciccarone, Terrence M., 297
Claeyssens, Marc, 180
Clauser, Eric, 1103
Cleaver, James E., 557
Clemetson, Kenneth J., 389
Clostre, François, 186

Cohen-Solal, M., 874
Coletta, M., 970
Colin, D. A., 255
Colucci, Wilson S., 924
Cominetti, Paola, 1279
Cooper, Denise R., 1346
Corr, Peter B., 485
Corvol, Pierre, 1103
Couraud, F., 255
Cousin, E., 383
Cowan, Richard, 792
Coy, David H., 1383
Creutz, Carl E., 660
Crimmins, Dan L., 910
Crouch, Michael F., 149
Crumpton, Michael J., 328
Cucuianu, M. P., 1020
Cuevas, Pedro, 611
Curatola, Giovanna, 840
Curless, Craig C., 733
Cuttitta, Frank, 1383

Dalal, N. S., 137
Daluge, Susan, 1046
Daniels, A. J., 1243
Darbon, Jean-Marie, 634
Darke, Paul L., 297
Darlak, Krzysztof, 125
Daron, Harlow, 108
Dashti, Nassrin, 581
David, Carol, 602
Davies, Adelina A., 328
Dayanithi, G., 255
Deamer, D. W., 1020
Dean, John W., III, 411
Deana, Renzo, 1316
Delaflotte, Sylvie, 186
del Valle, Ruth, 1353
Demczuk, Stephen, 463
De Mellow, John S. M., 199
Denarier, E., 595
Deroche, Marie-Esther, 1130
Dhalla, Naranjan S., 917
Dianoux, Anne-Christine, 1175
Dietrich, C., 1111
DiSalvo, Joseph, 653
Dobson, P. R. M., 1414
Dong, Aichun, 752
Doni, M. Gabriella, 1316
Dosch, Donald C., 517
Draznin, Boris, 570
Dufau, Maria L., 776
Duman, Ronald S., 1039
Dwivedi, R. S., 131
Dwulet, Francis E., 762

Ebner, Kurt E., 233
Eckstein, Fritz, 340
Edelman, Arthur M., 860
Edwards, B., 1020
Elazar, Zvulun, 602
Elimban, Vijayan, 917
Endo, Hirahito, 1007
Engel, P., 695
Eto, Yuzuru, 668
Evain-Brion, D., 263

Falgueyret, Jean-Pierre, 1083
Faragó, Anna, 628
Farese, Robert V., 1346
Fausser, Luc, 304
Feldmann, Marc, 830
Feldstein, Paul A., 340
Felipo, Vicente, 506
Fenton, Dennis M., 733
Ferretti, Gianna, 840
Figarella, C., 318
Fischer, Jan A., 1187
Floss, Heinz G., 517
Foisy, Sylvain, 205
Fournet, B., 318
Fournier, Agnes, 222
Frachet, P., 595
Fraser, Claire, 375
Freidinger, Roger M., 297
Fresno, Manuel, 1360
Fritzler, Marvin J., 675
Froesch, E. Rudolf, 1187
Frucht, Harold, 1383
Fuchs, Sara, 602
Fujii, Nobutaka, 1237
Fujioka, Toshiyuki, 54
Fukuzaki, Hisashi, 846
Funakoshi, Akihiro, 1237
Funakoshi, Susumu, 1237

Gaffey, Lynn C., 660
Gaillard, Isabelle, 1103
Galron, Ronit, 1203
Gama Sosa, Miguel A., 417
Gandini, Enrico, 46
Garcia, Luis, 1324
Garel, M-C., 874
Garrett, Kennon M., 1039
Garsky, Victor M., 297
Gelosa, Franca, 995
Gerbaud, P., 263
Gerbes, Alexander L., 228
Giacobino, Jean-Paul, 375
Giralt, M., 493
Glickman, J. Fraser, 1250
Goetinck, Paul F., 99
Gohill, J., 675
Gold, Gerald, 457
Goldstein, D. S., 1070
Gonzalez, Frank J., 866
Goto, Katsutoshi, 1182
Gotoh, Naomasa, 470
Gotoh, Takeshi, 396
Gottschall, Paul E., 61
Govoni, Stefano, 1279
Grisolía, Santiago, 506
Grodsky, Gerold M., 457
Grzonka, Zbigniew, 125
Guy-Crotte, O., 318

Hagiwara, K., 1026
Hähnel, Roland, 116
Hall, Jessica C., 417
Hamberg, Mats, 543
Hamman, Helen C., 660
Hanukoglu, Lea, 275
Haq, Riaz ul, 712
Harada, Nobuhiro, 725
Harada, Shigeko, 551
Harig, James M., 164
Hartog, Karin O., 1063
Hasegawa, Yoshihisa, 668
Hassan, Manuel, 1403
Hatake, Katsuhiko, 1195
Haugwitz, Rudiger, 1120
Hayaishi, Osamu, 882
Hayashi, Kyozo, 563
Heathers, Guy P., 485
Hegazy, Mohammed G., 653
Heisler, S., 1000
Henquin, Jean-Claude, 769
Herington, Adrian C., 783
Hexham, J. Mark, 328
Hii, Charles S. T., 222
Hinds, Thomas R., 860
Hinsch, K.-D., 954
Hirai, Yoshikatsu, 269
Hirano, Kazuyuki, 563
Hishida, Shigeru, 1195
Honzawa, Mayumi, 355
Hopkins, Irene B., 275
Hosokawa, Yoshitaka, 987
Houslay, Miles D., 290, 855
Howland, David S., 1166
Hu, Chunfang, 500
Hua, Mei, 1046
Huang, Sharon Kuei-Shang, 112
Hughes, Bronwyn G., 960
Hymer, W. C., 1166

Igarashi, Masao, 668
Iglesias, R., 493
Iino, Shiro, 563
Ikeda, Kazuto, 889
Ikeda, Seiichiro, 92
Inada, Mitsuo, 619
Inoue, Fumiko, 54

Inuzuka, Chikako, 68, 681
Ippoliti, R., 970
Ishida, Nobuhiro, 681
Isom, G. E., 78
Issinger, Olaf-Georg, 1390
Itoh, S., 1026
Ives, David H., 92

Jacobsen, B. P., 171
Jaiswal, Rama K., 905
James, Peter, 1187
Jefferson, L. S., 706
Jensen, Robert T., 1383
Jeyaseelan, R., 1054
Jézéquel, Anne Marie, 840
Joulin, V., 874
Jungi, Thomas W., 477
Just, Ingo, 361

Kaiser, Jeffrey R., 275
Kakishita, Eizo, 1195
Kakkar, Vijay V., 1257
Kalimi, Mohammed, 22
Kalnitsky-Aliff, Joan, 746
Kanaide, Hideo, 312
Kanety, Hannah, 602
Kang, Jung Bu, 524
Kangawa, Kenji, 355
Kapoor, M., 1097
Kariya, Ken-ichi, 846
Kashiwazaki, Sadao, 1007
Kasuya, Yoshitoshi, 1182
Katsuura, Goro, 61
Kawahara, Yasuhiro, 846
Kawakami, Takuma, 269
Kawamura-Konishi, Yasuko, 348
Kelkar, S. M., 451
Kelly, P. A., 1000
Kenney, William C., 733, 807
Kesbeke, Fanja, 757
Keung, Wing-Ming, 38
Kieffer, Nelly, 389
Kiffel, Liliane, 282
Kikuchi, Akira, 889
Kim, Min-Young, 92
Kimball, S. R., 706
Kimura, Sadao, 1182
Kimura, Shioko, 866
Kirkpatrick, Nanda Duhé, 689
Kiron, M. A. Ravi , 1230
Kiser, Rebecca, 1046
Kishimoto, Yasuo, 403
Kitani, Kenichi, 1237
Klein, Michael L., 733
Kobayashi, Kenzo, 217
Kojima, Itaru, 335
Komori, Naoka, 1160
Kosaki, Goro, 68
Koyama, Tanetoshi, 396
Krag, Sharon S., 1063
Krebs, Edwin G., 860
Kretz-Zaepfel, M., 255
Krishnamurthi, Sushila, 1257
Kruithof, E. K. O., 383
Kubo, Mitsumasa, 1333
Kubota, Ichiro, 681
Kuhnert, Peter, 477
Kumar, S., 131
Kunkel, S. L., 1340
Kuriyama, Masayuki, 54
Kusano, Tomikazu, 563
Kwong, Suzanna, 9

Lai, Por-Hsiung, 733, 807
Lambert, Anne-Marie, 304
Lang, F., 1139
Lapetina, Eduardo G., 149
Larner, Andrew C., 701
Lascu, I., 1020
Lavelle, George C., 1046
Lawson, Larry D., 960
Lazdunski, Michel, 1324
Leblanc, Yves, 1083
Le Boulch, P., 874
Lee, Bonita, 1144
Lee, Diana M. 581
Lee, Ernest Y. C., 1398
Lee, Fangchen, 1046
Lee, Sheng-Chung, 1287
Lefebvre, Yvonne A., 675
Leighton, Federico, 1353
Leitner, J. Wayne, 570
Leroux, Jean-Paul, 282
Leu, Chih-Tai, 297
Lewis, Aaron, 86
Liapi, C., 263
Liepnieks, Juris, 762
Lin, Boniface J., 1287
Litosch, Irene, 240
Liu, Ming-Cheh, 964
Long, Rochelle M., 866
Lopez, Linda C., 1223
Loyau, Gérard, 1209
Lu, Hsieng S., 733, 807
Lumma, Patricia K., 297
Luo, Weixing, 1144
Lynch, Kevin R., 660

MacDonald, Paul N., 157
Maeda, Shuichiro, 814
Magneney, Sylviane, 323
Mampel, T., 493
Mann, Michael B., 733
Marguerie, G., 595
Marks, R. M., 1340
Martin, Brian M., 403, 866
Martin, I., 493
Martin-Moutot, N., 255
Masaki, Tomoh, 1182
Matsubara, Hiroaki, 619
Matsuda, Morihiro, 551
Matsumoto, Hiroyuki, 1160
Matsuno, Kazuhiko, 1152
Matsuo, Hisayuki, 246, 355
Mauviel, Alain, 1209
Mayer, Michel, 323
Mayo, Joseph G., 1046
Maziere, Cécile, 424
Maziere, Jean-Claude, 424
Mazzilli, Cristina, 46
McCourt, Dave W., 910
McDonald, Melisenda J., 438
McMaster, Earl, 86
Meek, James L., 143
Melloni, Edon, 46
Menegazzi, Marta, 995
Merz, Wolfgang E., 1271
Messerschmidt, Robert G., 752
Miasiro, Nobuco, 312
Michalski, Linda A., 438
Michelot, Robert, 323
Millan, Jose L., 563
Minamino, Naoto, 355
Miñana, María-Dolores, 506
Misra, Prakash C., 940
Miwa, Masanao, 995
Miwa, Toshiaki, 882
Miyamoto, Kaoru, 668
Miyasaka, Kyoko, 1237
Mizoguchi, Yasuhiro, 217
Mizuno, Kensaku, 246
Mohanty, P. K., 1070
Mok, Tina, 581
Moore, Pamela B., 193
Mora, Liliana, 424
Moreau, Martine, 424
Morel, Françoise, 1175
Morel, G., 1000
Mori, Shunji, 1077
Mori, Yasukiyo, 619
Morimoto, Satoshi, 403
Morisawa, Seiji, 217
Moritz, Robert L., 116
Moriyama, Yoshinori, 211
Moyer, James D., 1383
Mulshine, James L., 1383
Murray, Andrew W., 222
Muzzin, Patrick, 375

Nadler, Jerry, 717
Nagai, Kiyoyasu, 1195
Nagao, Seiji, 1077

Nair, Govindan P., 1346
Nakae, Taiji, 470
Nakagawa, Yasuhito, 947
Nakai, Satoru, 269
Nakamura, Motoomi, 312
Nakamura, Rieko, 1237
Nakamura, Takanori, 668
Nakamura, Tomoko, 246
Nakazato, Hiroshi, 68, 619, 681
Narayanan, V. L., 1046, 1120
Natale, Ronald B., 1383
Natarajan, Rama, 717
Nath, Jayasree, 1376
Neal, Tom L., 368
Necochea, Cecilia, 1353
Needham, Lindsey, 855
Nemali, M. R., 131
Nichols, William C., 762
Nigon, Fabienne, 1293
Nishida, Tsutomu, 269
Nishiguchi, Seiji, 814
Nishikimi, Morimitsu, 987
Nishino, Naoki, 269
Niskanen, Eero, 15
Noguchi, Teruhisa, 681
Nordmann, J. J., 255
Nörenberg, Ursel, 898
Noris, Patrizia, 823
Nozawa, Yoshinori, 1077
Nugent, Diane J., 931
Nutt, Ruth F., 297

O'Brien, John S., 403
Ochs, Duane L., 746
Ogata, Etsuro, 335
Ogura, Kyozo, 396
Ohnishi, Shuji, 814
Ohno, Kousaku, 1015
Ohshima, Takehiro, 246
Oikawa, Shinzo, 68, 619
Okabe, T., 1026
Okamura, H., 1000
Oltersdorf, Tilman, 432
Ong, David E., 157
Ooi, Guck T., 783
Orlandi, Francesco, 840
Ostuni, Angela, 978
Oury, Florence, 634
Ozawa, Takayuki, 987
Ozols, Juris, 931
Ozutsumi, Kunihiro, 551

Painter, G. R., 1243
Palmert, Mark R., 432
Paradies, Giuseppe, 1302
Parenti, Marco, 1279
Passarella, Salvatore, 978
Paulmichl, M., 1139
Persechini, Pedro M., 740
Peterhans, Ernst, 477
Pfeilschifter, J., 1111
Picquot, Pascal, 304
Pijuan, Vivian, 240
Pilz, Ingrid, 180
Pinkerton, Frederick D., 689
Pirotzky, Eduardo, 186
Podlisny, Marcia Berman, 432
Pohl, Lance R., 866
Polonovski, Jacques, 424
Pols, H. A. P., 588
Poltronieri, Licia, 46
Potier, Pierre, 323
Powledge, Annette, 1376
Prandini, M. H., 595
Pujol, Jean-Pierre, 1209
Pupillo, Maureen, 757
Pyne, Nigel J., 290

Quagliariello, Ernesto, 978
Qualls, Jeanine, 1046

Ramaswamy, Krishnamurthy, 164
Rao, M. S., 131
Rapuano, Bruce E., 644
Ratajczak, Thomas, 116
Rathinavelu, A., 78
Rawal, Nenoo, 451
Raynaud, F., 263
Reddy, J. K., 131
Reffner, John A., 752
Regelson, William, 22
Reimann, Erwin M., 653
Reinhard, J. F., Jr., 1243
Remé, Ch., 1111
Revis, Shalini, 940
Rice, Timothy J., 143
Richter, Dietmar, 898
Riddell, M. Gatz, 108
Rider, Maureen A., 1160
Rider, V., 1368
Rieger, François, 1324
Riendeau, Denis, 1083
Robins, Morris J., 1144
Roeder, Lois M., 275
Rokach, Joshua, 1083
Romey, Georges, 1324
Rosa, J., 874
Rosenberg, Elizabeth, 1230
Rosenberg, Gary B., 860
Rosenthal, Walter, 361
Roskoski, Robert, Jr., 801
Roth, Gerald J., 931
Rouis, Mustapha, 1293
Rubalcava, Boanerges, 30
Rubin, Leona J., 485
Rubin, Raphael, 1090
Rubini, Michele, 46
Ruggiero, Francesca Maria, 130
Rupp, Heinz, 917
Ruprecht, Ruth M., 417
Russo, Carlo, 1230

Sachs, Leo, 1265
Saito, Naoaki, 1039
Sakagami, Yoshihide, 217
Salhany, James M., 1215
Salmon, Suzanne, 424
Sasaki, N., 1026
Sassa, Shigeru, 681
Satoh, Hiroko, 866
Sausville, Edward A., 1383
Sawamura, Tatsuya, 1182
Scarpelli, D. G., 131
Schilte, J. P., 588
Schlender, Keith K., 653
Schmauder-Chock, Elsa A., 1308
Schmitt, Pascal, 323
Schneider, Helge R., 1390
Schroepfer, George J., Jr., 689
Schultz, G., 954
Schultz, Robert H., 1046
Schwartz, Benjamin D., 910
Scocca, Jane R., 1063
Seishima, Mariko, 1077
Seki, Shuichi, 217
Selkoe, Dennis J., 432
Selvatici, Rita, 46
Seprödi, János, 628
Seydoux, Josiane, 375
Shanmugam, G., 1054
Shannon, William M., 1046
Shapiro, Robert, 530
Sharma, Rameshwar K., 905
Sherman, Nancy A., 570
Shi, Xianglin, 137
Shibai, Hiroshiro, 335, 668
Shichi, Hitoshi, 1160
Shimada, Kazunori, 814
Shin, Hong Dae, 524
Shinmi, Osamu, 1182
Shoemaker, Robert H., 1046
Showell, H. J., 1340
Shur, Barry D., 1223
Siegel, Frank L., 368
Sigal, Irving S., 297
Simpson, Richard J., 116
Sinha, Y. N., 171
Sinigaglia, Fabiola, 823
Sloan, Renee L., 1215
Smith, Charles D., 1250
Smith, Zigrida L., 1
Snaar-Jagalska, B. Ewa, 757
Snyder, Fred, 1

Soergel, Konrad H., 164
Soffer, Richard L., 1230
Sok, Dai-Eun, 524
Sokolovsky, Mordechai, 1203
Soto, Ubaldo, 1353
Sowadski, Janusz M., 99
Sowers, J. R., 1070
Spät, András, 628
Spatola, Arno F., 125
Standaert, Mary L., 1346
Steggles, Alan W., 576
Stern, Naftali, 717
Stevens, Raymond C., 1120
Stigbrand, Torgny, 563
Stillwell, William, 511
Storm, Daniel R., 860
Strieter, R. M., 1340
Stringfellow, David A., 108
Strohl, William R., 517
Strott, Charles A., 1333
Strydom, Daniel J., 530
Subbarao, V., 131
Sugimoto, Nakaba, 551
Sugimura, Takashi, 995
Sugino, Hiromu, 668
Sugita, Osamu, 681
Sugita, Yoshiki, 1182
Suiko, Masahito, 964
Sumita, Sachiyo, 54
Sussman, Karl E., 570
Suzuki, Akira, 1130
Suzuki, Haruo, 348
Suzuki, Hiroshi, 987
Suzuki, Hisanori, 995
Suzuki, Kunihiko, 1015
Suzuki, Satoru, 1144
Sveenivasan, G. M., 1097
Sweadner, Kathleen J., 796

Tabuchi, Mari, 335
Tai, Tong-Yuan, 1287
Takagi, Masayuki, 551
Takai, Yoshimi, 846, 889
Takaku, F., 1026
Takano, Masaaki, 269
Takemoto, Dolores J., 1160
Tallman, John F., 1039
Tam, You C., 1403
Tamamura, Hirokazu, 1237
Tanaka, Akemi, 1015
Tanaka, Shoji, 246
Tang, Xibai, 964
Tanzer, Marvin L., 411
Tashiro, Yutaka, 1152
Tawaragi, Yasunori, 681
Taylor, William D., 1166
Temime, Nathalie, 1209
Terzis, Aristidis, 1120
Testori, Alessandro, 222
Thames, M. D., 1070
Thangada, S., 131
Thirion, Jean-Paul, 1403
Tildon, J. Tyson, 275
Toda, Haruo, 987
Tommasi, Marina, 995
Tomme, Peter, 180
Torti, Mauro, 823
Totsuka, Yasuo, 335
Tovell, Dorothy, 1144
Trabucchi, Marco, 1279
Trepel, Jane B., 1383
Trezzini, Cristina, 477
Tsai, Larry B., 733, 807
Tsonis, Panagiotis A., 99
Tsunoda, Yasuhiro, 1152
Turner, Martin, 830
Tyrrell, David L. J., 1144

Uchida, Kazuhiko, 995
Ueno, Ryuji, 882
Ullah, A. H. J., 695
Umeda, Yukihisa, 619
Urayama, Osamu, 796
Usman, M. I., 131
Uzan, G., 595
Uzumaki, H., 1026

Valdez, B. C., 537
Vallari, David S., 1
Vallee, Bert L., 530
Van Haastert, Peter J. M., 757
van Huystee, Robert B., 500
van Leeuwen, J. P. T. M., 588
Vantard, Marylin, 304
Varma, Shobha, 233
Veber, Daniel F., 297
Vega-SaenzdeMiera, Eleazar C., 30
Venkatraman, Jaya T., 675
Venter, John-Craig, 375
Vignais, Pierre V., 1175
Villarroya, F., 493
Viñas, O., 493
Vince, Robert, 1046
Vincenzi, Frank F., 860
Visser, T. J., 588
Vitek, Michael P., 1039
Vollmar, Angelika M., 228

Wakabayashi, Ichiro, 1195
Waku, Keizo, 947
Wang, Chih-Lueh Albert, 1033
Wassall, Stephen R., 511
Wei, Lei, 1103
Weiler, E. W., 954
Weislow, Owen S., 1046
Wenger, Roland H., 389
Weremowicz, Stanislawa, 530
Weyler, Walter, 445
Wicki, Andreas N., 389
Wieland, Felix T., 457
Williams, Stuart A., 931
Wise, Gwendolyn M., 924
Witker, Dennis S., 432
Wolpert-DeFilippes, Mary, 1120
Wrench, I. J., 1411
Wright, Lynda S., 368

Yada, Yukihiro, 1077
Yajima, Haruaki, 1237
Yamamoto, Hiromichi, 312
Yamamoto, Kozo, 882
Yamamoto, Sukeo, 217
Yanagisawa, Masashi, 1182
Yeldandi, A., 131
Yoo, Min, 576
Yoshihara, Eisaku, 470
Younathan, E. S., 537
Young, John Ding-E, 740
Younkin, Linda H., 432
Younkin, Steven G., 432

Zapf, Jürgen, 1187
Zehnacker, Claire, 1130
Zheng, Shi Yan, 1398
Zoccarato, Franco, 1316

Volume 157

Abeles, Robert, 816
Abraham, Nader G., 480
Achyuthan, Komandoor E., 115
Ahmed, Nadera, 1182
Akagi, Junji, 548
Akagi, Masanobu, 548
Alestrøm, Peter, 875
Amaratunga, Mohan, 127
Ambar, I., 1104
Amin, Dilip, 530
Amino, Nobuyuki, 605
Anderson, Wayne, 1154
Ando, Mayumi, 1169
Andrés, Vicente, 664
Andrish, Jack T., 250

Angelastro, Michael R., 1117
Angwin, Pamela, 713
Appert, Hubert E., 657
Appling, Dean R., 245
Arakawa, Hiroharu, 183
Arakawa, Kikuo, 210
Araki, Shun-ichi, 337
Armour, Elwood P., 611
Arondel, V., 37
Aszalos, Adorjan, 808
Atarashi, Keiichiro, 1164
Ayad, Shirley, 250

Bailey, J. Martyn, 1159
Baird, Andrew, 256
Balint, Elisabeth, 808
Balla, Tamás, 1247
Ballard, F. John, 196
Ballermann, Barbara J., 755
Banville, D., 558
Barbanti-Brodano, Giuseppe, 1175
Barbour, K. W., 121
Barhanin, Jacques, 977
Barlowe, Charles K., 245
Barouki, Robert, 1309
Batist, Gerald, 1039
Batty, Ian H., 684
Baukal, Albert J., 1247
Baumann, Ulrich, 986
Baxter, Robert C., 196
Bdolah, A., 1104
Beach, D. H., 1239
Becker, E. L., 569
Bell, Graeme I., 937
Benight, Albert S., 127
Bergeron, Raymond J., 264
Berglund, Deborah, 174
Berlingieri, M. T., 1093
Berthelot, Pierre, 1309
Bertina, Rogier M., 1033
Bester, A. J., 500
Bey, Philippe, 1117
Bilan, Philip J., 1329
Biquard, J. M., 762
Bismuth, Georges, 1396
Blaisdell, J., 121
Blalock, J. E., 1205
Blanchet, J. P., 762
Blöcker, Helmut, 986
Boehm, A., 733
Bolard, J., 692
Borchardt, Ronald T., 308
Borrelli, Michael J., 611
Bouillaud, Frédéric, 783
Bousquet-Lemercier, Bernadette, 1309
Bowden, Edmond F., 1021
Brabenec, Anne, 271
Bradlow, H. L., 515
Brenner, R. R., 471
Breviario, Diego, 1182
Brinkman, A., 898
Broido, M. S., 776
Brower, Dorothy P., 944
Buczko, Ellen, 705
Bühler, Fritz R., 1360
Burckhardt, G., 921
Burgess, Richard R., 992
Burgess, Wilson H., 718

Cabell, Mayo, 81
Callahan, John W., 770
Campen, Carolyn A., 844
Carperos, Vasili, 100
Carreras, José, 664
Carter, Timothy H., 535
Casscells, Ward, 1336
Catt, Kevin J., 1247
Chain, Daniel, 1131
Challiss, R. A. John, 684
Chambers, Ann F., 166
Chambers, Timothy C., 507
Chandrasekhar, Srinivasan, 1352
Chang, Barbara K., 264
Chang, Sulie L., 698
Chen, J., 776
Chen, Qin, 1316
Chernick, Richard J., 480
Chida, Kazuhiro, 1, 9
Chiesa, Raúl, 626
Chiosi, E., 1093
Cieplak, Witold, 747
Clay, V. J., 1423
Coker, G. T., III, 1341
Cooksey, Karen, 256
Corcoran, George B., 315
Corry, Peter M., 611
Costello, C. E., 1239
Costello, Lawrence L., 457
Cotgreave, Ian, 443
Covey, Douglas F., 81
Coy, David H., 1154
Cozza, Eduardo N., 585
Craig, Ann Marie, 166
Craik, Charles S., 457
Crooke, Stanley T., 521
Cussó, Roser, 664
Czarniecki, M., 836

D'Agrosa, Raffaele M., 770
Dahlbäck, Helena, 30
Damais, Chantal, 1197
Das, U. N., 639
Debre, Patrice, 1396
Deckmyn, H., 1190
Deguchi, Yasuhiro, 580
de la Escalera, Santiago, 541
del Carmen Vila, Maria, 585
deMan, Peter, 575
Denhardt, David T., 166
De Rijke, Yolanda B., 1288
De Tullio, R., 867
de Vries, Cornelis P., 1390
Dhar, Ravi, 1182
Dickerman, H. W., 515
Dickinson, Kenneth E. J., 1154
Dijkema, Cor, 1085
DiSorbo, Dennis, 1007
Dixon, Richard A. F., 457
Dong, Liqun, 1316
Dottan, Shlomo A., 727
Drop, S. L. S., 898
Dufau, Maria L., 705
Dugas, Bernard, 1197
Durkin, J. P., 762

Eacho, Patrick I., 1148
Edenius, Charlotte, 801
Eick, Dirk, 379
Eidels, Leon, 747
Eilon, Gabriel, 507
Elias, Laurence, 963
Ellinas, Panayiotis A., 350
Ellis, G. C., 500
Emery, T., 389
Emoto, Naoya, 256
Englesse, Inga, 575
Evans, Claudia T., 1231

Faisal Khan, K. M., 440
Falcon, C., 1190
Farese, Robert V., 585
Farrell, Harold M., Jr., 944
Fasciotto, B., 762
Feldman, Mark, 286
Ferrara, Napoleone, 1376
Fiskum, Gary, 1218
Fjose, Anders, 426
Foley, James J., 521
Forbes, Briony, 196
Forrester, Ian T., 992
Forster, E., 1410
Foxworthy, Patricia S., 1148
Francesconi, Elisa, 1197
Francis, Mary D., 278
Frank, R., 883
Frank, Ronald, 986
Fredholm, Bertil B., 1046
Freeman, Craig, 218
Freer, R. J., 569

Frelin, Christian, 977
Friedman, BethAnn, 740
Friedrich, T., 921
Friteau, Laurence, 1197
Fu, Tao, 1429
Fujiki, Hirota, 740
Fujishiro, Kinya, 1169
Fujita, Takuo, 908
Fujita-Yamaguchi, Yoko, 955
Fukase, Masaaki, 908
Fukuda, Michiko N., 657
Fukumoto, Yasuo, 337
Fukuzaki, Hisashi, 337
Furusawa, Mitsuru, 410
Fusco, A., 1093
Futai, Masamitsu, 203

Gallina, Andrea, 1175
Ganapathi, Mahrukh K., 271
Gausepohl, H., 883
Gautvik, Kaare M., 875
Gelin, Johan, 575
Giannì, Maurizio, 1175
Gibbs, Esther J., 350
Gierthy, J. F., 515
Gillard, J., 733
Glaumann, Hans, 55
Go, Vay Liang W., 713
Goldblum, Amiram, 450
Goldfine, Ira D., 321
Goltzman, D., 558
Gomez-Sanchez, Celso E., 585
Gonzatti, Mary I., 134
Goodman, Alvin I., 480
Goodman, DeWitt S., 1078
Gordon, David F., 278
Gorospe, William C., 891
Gospodarowicz, Denis, 1376
Götschl, Michaela, 379
Gouy, Helene, 1396
Grabski, Anthony C., 992
Gray, Gary O., 1067
Greenberg, Charles S., 115
Grieco, M., 1093
Grimley, Philip M., 808
Grobler-Rabie, A. F., 500
Groffen, C. A. H., 898
Grosbois, M., 37
Grossberg, Sidney E., 109
Groves, Merton L., 944
Grunberger, Dorit, 457
Guerbette, F., 37
Guerrero, Juan M., 930
Guillemette, Gaetan, 1247
Gustafson, Susan, 530
Guyda, Harvey J., 632

Haeggström, Jesper, 801
Halushka, P. V., 733
Hampton, Brian, 718
Hanaki, Yoshihiro, 433
Hannaert, P., 692
Hanoune, Jacques, 1309
Harlan, Richard E., 698
Harvey, Anita K., 1352
Hasemann, Charles, 747
Hashimoto, Eikichi, 851
Hatefi, Youssef, 24
Hattori, Akinori, 301
Hatzinger, Paul B., 1316
Hawley, Dennis M., 321
Hayashi, Hidetoshi, 563
Hedstrom, Lizbeth, 816
Hendy, G. N., 558
Herbert, Joseph, 1078
Hibbs, John B., Jr., 87
Hieda, Nobuyuki, 433
Higaki, Noriko, 190
Highland, Ella, 457
Hinsch, K.-D., 883
Hirosumi, Jiro, 301
Hirota, Kenji, 9
Hirschowitz, Basil I., 1154
Hoch, James A., 24
Høgset, Anders, 875
Hollocher, Thomas C., 106
Holz, G. G., Jr., 1239
Hopwood, John J., 218
Horiguchi, Junko, 395
Horwitz, Kathryn B., 278
Hoshijima, Masahiko, 851
Hosokawa, Yoshitaka, 914
Hough, F. S., 500
Hsu, Helga, 321
Hunyady, László, 1247
Hurme, Mikko, 861

Ichinose, Hiroshi, 494
Ideishi, Munehito, 210
Iida, Hiroshi, 330
Ikata, T., 225
Ikeda, Masaharu, 210
Illiano, G., 1093
Imaeda, Takao, 1124
Inadome, Shuichiro, 970
Ingelman-Sundberg, Magnus, 55, 443
Inoue, Keizo, 563
Inoue, Takafumi, 419
Ishida, Nakao, 597
Ishii, Kuniaki, 1139
Ishizaki, Jun, 203
Ito, Akio, 970
Ito, Hirataka, 472
Ito, Nobuyuki, 821
Izumi, Akihiro, 359

James, Calvin B. L., 535
Jannoun-Nasr, R., 1051
Jenness, Robert, 944
Ji, Xiao-bing, 106
Johansson, Inger, 55
Johnson, Eve W., 1205
Jolliot, A., 37

Kader, J. C., 37
Kalyanaraman, S., 1051
Kameyama, Masakuni, 472
Kamp, David W., 793
Kampcik, S. J., 515
Kanazir, D., 762
Kanda, Keiko, 1383
Kanduc, Darja, 373
Kangawa, Kenji, 402, 410
Kanungo, M. S., 1403
Kariya, Ken-ichi, 337
Kasinathan, C., 1296
Kasson, Barry G., 891
Kathuria, Satish, 955
Kato, Akira, 308
Kato, Noriko, 1
Kato, Toshiyuki, 563
Katoh, Osamu, 618, 828
Katz, R. W., 1253
Kawahara, Yasuhiro, 337
Kawata, Masahito, 670, 851
Kawazoe, Yutaka, 1124
Kelleher, Joanne K., 1218
Kenfield, Doug, 174
Kikuchi, Akira, 670, 851
Kim, Ki-Han, 1015
Kimura, Akira, 190
Kirchberger, M. A., 1296
Kishimoto, Susumu, 580
Kitagawa, Yoshinori, 821
Kitaguchi, Nobuya, 472
Kitamoto, Toshihiro, 1302
Kitamura, Kazuo, 949
Kitamura, Masaya, 705
Kitaoka, Masafumi, 48
Kitson, Fulton G., 1417
Kleinberg, David L., 286
Klip, Amira, 1329
Kloog, Y., 1104
Koba, Ann, 256
Kochva, E., 1104
Koga, K., 1258
Kohanski, Ronald A., 140
Kohtz, D. Stave, 286
Kojima, Itaru, 48
Kolber, Michael, 677

Komiya, Ichiro, 346
Kondo, Jun, 670
Koornneef, I., 16
Kopman, Cynthia R., 535
Korc-Grodzicki, Beatriz, 1131
Kortleve, D. J., 898
Kotts, Claire E., 944
Krett, Nancy L., 278
Krsmanovic, V., 762
Kudo, Ichiro, 563
Kufe, Donald W., 395
Kuiper, Johan, 1288
Kunert-Radek, J., 95
Kung, H.-F., 776
Kuno, Takayoshi, 1139
Kuo, J. F., 1000
Kuroki, Toshio, 1, 9
Kushnaryov, Vladimir M., 109
Kushner, Irving, 271
Kuwahara, Toyoko, 970
Kvanta, Anders, 1046

Labdon, J. E., 836
Lai, Chun-Yen, 488
Laloraya, Malini, 146
Laloraya, Manmohan M., 146
Lando, Danielle, 1197
Langer, Jerome A., 1264
Lapetina, Eduardo G., 1323
Lawson, J. W. R., 949
Lazar, R., 389
Lazdunski, Michel, 977
Leatham, Gary F., 992
Lee, David B. N., 1226
Lee, Kweon Haeng, 1015
Lee, Michael, 1336
Lee, Yong J., 611
le Gouvello, Sabine, 1396
Leibovich, S. Joseph, 793
Levere, Richard D., 480
Lewiński, A., 95
Libby, Paul R., 264
Libman, J., 389
Lin, T., 121
Lincoln, D. W., II, 515
Lindgren, Jan Åke, 801
Lindros, Kai O., 55
Ling, Nicholas, 256
Little, Peter F. R., 828
Longo, P. A., 776
Lonnroth, Christina, 575
Lord, A., 733
Lowry, Stephen F., 575
Luciw, P. A., 1051
Lundblad, Roger L., 295
Lundholm, Kent G., 575
Ma, Xiaoyan, 160
MacDonald, Hector S., 109
Maddux, Betty A., 321
Maeda, Masatomo, 203
Maekawa, Keiji, 410
Maestre, Marcos F., 350
Mahley, Robert W., 1212
Mais, D. E., 733
Makheja, Amar N., 1159
Makk, George, 713
Mann, Michael, 713
Marala, Ravi B., 755
Martasek, Pavel, 480
Martin, Thomas W., 1271
Martone, Robert L., 1078
Masri, Khaled A., 657
Matsuo, Hisayuki, 402, 410
Matsuoka, Hiroaki, 1164
Matsushiro, Aizo, 648
Maxwell, E. Stuart, 154
May, Lester T., 271
Mayeux, P. R., 733
McDaniel, Huey B., 1154
McDermott, Martin J., 626
McDevitt, Cahir A., 250
McKeehan, Wallace L., 1007
McMullan, Patrick C., 81
Medlock, Kimberly A., 232
Mehdi, Shujaath, 1117
Mehlman, Tevie, 718
Melloni, E., 867
Mercado, Maluz, 256
Merrill, Alfred H., Jr., 232
Michaelis, Kevin C., 1271
Mikoshiba, Katsuhiko, 419
Milanesi, Gabriele, 1175
Miller, Raymond R., 250
Minamino, Naoto, 402, 410
Misra, Brijesh C., 1226
Miura, I., 225, 1258
Miyai, Kiyoshi, 605
Moldawer, Lyle L., 575
Molina y Vedia, Luis, 1323
Momoi, Mariko, 1302
Momoi, Takashi, 1302
Monden, Yoshiaki, 183
Moore, Penny B., 963
Morardet, N., 762
Morinelli, T. A., 733
Morita, Takashi, 648
Moritz, Robert L., 364
Morris, C. Phillip, 218
Morton, H. E., 733
Moser, Tammy L., 115
Mouchirout, G., 762
Mukherjee, Barid B., 166
Munch-Petersen, B., 1369
Murad, Ferid, 1139
Muramatsu, Hisako, 618
Muramatsu, Takashi, 618
Murata, Kousaku, 190
Murphy, Anne N., 1218

Nadel, Jay A., 457
Nagabhushan, T. L., 836
Nagao, Minako, 821
Nagao, Yoshiro, 238
Nagasawa, Yoshitaka, 346
Nagata, Kyosuke, 419
Nagata, Toshi, 648
Nagatsu, Toshiharu, 494
Nagineni, Chandrasekharam N., 1226
Nahorski, Stefan R., 684
Nakamura, Shigenobu, 472
Nakamura, Tetsuro, 301
Nakamura, Yohko, 1111
Nakane, Masaki, 1139
Nakanishi, Shigetada, 410
Nakano, Itsuro, 713
Nalpas, Bertrand, 1309
Namiki, Mikio, 705
Nandabalan, K., 68
Naoi, Makoto, 494
Natori, Yasuo, 440
Naveh, Nava, 727
Neary, J. T., 1410
Negoro, Shigeru, 580
Nelson, Paul V., 218
Nemir, Mohamed, 166
Newhouse, Yvonne M., 1212
Nieto, María Angela, 541
Nishi, Shigeo, 937
Nishikawa, H., 61
Nishikimi, Morimitsu, 914
Nishimura, Junji, 677
Niwa, T., 515
Njølstad, Pål Rasmus, 426
Nolan, Roger D., 1323
Nomiyama, Hisayuki, 548
Nordeen, Steven K., 278
Nordstedt, Christer, 1046
Norenberg, L. O. B., 1410
Norenberg, M. D., 1410
Nozaki, Masami, 648
Nozawa, Yoshinori, 1429

Ogata, Etsuro, 48
Ogawa, Takuo, 433
Ohkubo, Hiroaki, 410
Ohmori, Toshihiko, 670, 851
Ohtsuki, Kenzo, 597
Oishi, Kazuhiko, 1000
Oka, Hirofumi, 183
Okada, Mitsuko, 440

Okamura, Naomichi, 1280
Okano, Yukio, 1429
Okura, Akira, 183
O'Malley, K. L., 1341
Onozaki, Kikuo, 563
Orimo, Hajime, 301
Oron, U., 1104
Oshima, Akihiro, 238
Ouchi, Yasuyoshi, 301
Owens, Daniel D., 1231
Ozawa, Takayuki, 433, 914

Padayatty, J. D., 68
Page, Ernest, 330
Pahl, Julie A., 250
Palacián, Enriques, 541
Palkama, Tessa, 861
Palma, M. Ugo, 1061
Parker, Charles J., 115
Parmentier, C., 762
Pash, James, 1159
Pasternack, Robert F., 350
Patarroyo, Manuel, 443
Patel, Rohit G., 321
Pave-Preux, Muriel, 1309
Pawlak, André, 1309
Peluffo, O. R., 471
Penttilä, Kai E., 55
Perrone, Mark H., 530
Pfliegler, G., 1190
Pincus, M. R., 776
Pinkerton, Frederick D., 359
Piotrowski, J., 61
Pippen, Anne M. M., 115
Ploos van Amstel, Hans K., 1033
Pol, Stanislas, 1309
Polverini, Peter J., 793
Polychronakos, Constantin, 632
Pontremoli, R., 867
Pontremoli, S., 867
Porter, Carl W., 264
Posner, Barry I., 632
Pradeep, kumar G., 146
Pramanik, B., 836
Prasad, Kari U., 1061

Quagliariello, Ernesto, 373

Rachlin, Elliot M., 87
Ragan, C. I., 1423
Raimbault, Serge, 783
Ramlal, Toolsie, 1329
Rath, P. C., 1403
Rechler, Matthew M., 718
Reddanna, P., 1348
Reddi, A. H., 1253
Reddy, C. C., 1348
Reddy, P. S., 1348
Reiter, Russel J., 930
Reitsma, Pieter H., 1033
Resink, Thérèse J., 1360
Ricquier, Daniel, 783
Rimoldi, O. J., 471
Rincon, Jorge, 443
Ristic, A., 762
Robertson, Daniel A., 218
Robertson, Donald L., 1027
Robinson, R., 1051
Rokita, Steven E., 160
Ronai, Z. A., 590
Rose, Stephen M., 963
Rosenthal, W., 883
Rosner, Marsha Rich, 740

Sagara, Yasuhiro, 970
Saheki, Shuichi, 1139
Sakaguchi, A. Y., 558
Sakai, Ryuichi, 821
Sakamoto, Hiromi, 618, 828
Sakiyama, Shigeru, 1111
Sakuraba, Hitoshi, 238
Salamino, F., 867
Salazar, Daniel E., 315
Sampson-Johannes, Adam, 395
Sane, David C., 115
Santana, Celsa, 930
Santella, R. M., 590
Sarabia, Vivian, 1329
Sarau, Henry M., 521
Sarge, Kevin D., 154
Sariaslani, F. Sima, 1417
Sasaguri, Manabu, 210
Sato, Atsushi, 440
Satyaswaroop, Pondichery G., 1067
Schaafsma, Tjeerd J., 1085
Schenker, Esther, 140
Schilling, James, 713
Schmid-Alliana, Annie, 977
Schon, Eric A., 1078
Schroepfer, George J., Jr., 359
Schultz, Debra, 271
Schultz, G., 883
Sciortino, Francesco, 1061
Scott-Burden, Timothy, 1360
Searle, Geoff F. W., 1085
Sedmak, J. James, 109
Sehgal, Pravinkumar B., 271
Seino, Susumu, 937
Sekar, M. Chandra, 1154
Semus, S. F., 569
Senaratne, Vinitha, 1021
Setoyama, Chiaki, 548
Sewerynek, E., 95
Shaltiel, Shmuel, 1131
Shanzer, A., 389
Sharma, Rameshwar K., 755
Sherman, Matthew L., 395
Shi, Er-gang, 1007
Shiahaan, Teruna, 100
Shibata, Futoshi, 256
Shimada, Kazunori, 548
Shimasaki, Shunichi, 256
Shimizu, Yoshifusa, 346
Shiojiri, Satoshi, 472
Shrivastav, Shashi, 1336
Sigal, Elliott, 457
Sihvola, Marja, 861
Simpson, Richard J., 364
Singh, B. N., 1239
Skoglund, Göran, 443
Slaughter, Clive A., 1231
Slomiany, A., 61
Slomiany, B. L., 61
Smith, Eric M., 1205
Smith, Kevin R., 308
Sobue, Kenji, 1383
Sokolovsky, M., 1104
Sokolovsky, Mordechai, 42
Solangi, Karim, 480
Soprano, Dianne R., 1078
Sorge, Christopher L., 315
Soulages, J. L., 465
Sparatore, B., 867
Spector, Abraham, 626
Speir, Edith, 1336
Spicher, K., 883
Spina, A., 1093
Squinto, Stephen P., 698
Sreenath, Taduru L. V., 1182
Srere, Paul A., 1231
Srinivasan, A., 1051
Stevens, James L., 1316
Strobel, Gary, 174
Strobel, Scott, 174
Sudoh, Tetsuji, 410
Sugawara, Fumio, 174
Sugimura, Takashi, 494, 618, 821, 828
Sugita, Yoshiki, 1280
Sugiyama, Satoru, 433
Suzuki, Hiroshi, 914
Suzuki, Yoshiyuki, 238
Svanborg-Eden, Catharina, 575
Swaneck, G. E., 515
Szabo, Laszlo, 196
Szkudliński, M., 95

Tahira, Tomoko, 821
Taintor, Read R., 87
Tajima, Yutaka, 1280
Takada, Kaoru, 605
Takagi, Masao, 1164
Takahashi, Kazuhiko, 1124

Takahashi, Tsutomu, 494
Takahashi, Yasuyuki, 472
Takai, H., 225
Takai, Yoshimi, 337, 670, 851
Takasu, Nobuyuki, 346
Takata, S., 225
Takenaga, Keizo, 1111
Taki, Kazumi, 433
Takishima, Kunio, 740
Tamura, Taka-aki, 419
Tanaka, Seigo, 472
Tanaka, Tatsuro, 75
Taniyama, Matsuo, 949
Tatemoto, Kazuhiko, 713
Tauber-Finkelstein, Miriam, 1131
Tchang, F., 37
Terada, Masaaki, 618, 828
Tetsumoto, Toru, 605
Theodorou, Ioannis, 1396
Thomas, Helmut, 949
Thompson, E. A., 121
Thompson, Marvin P., 944
Tinoco, Ignacio, Jr., 350
Toda, Haruo, 914
Toniolo, C., 569
Tor, Y., 389
Trach, Kathleen, 24
Traugh, Jolinda A., 134
Troiani, Maureen E., 930
Trotta, P. P., 836
Trower, Michael K., 1417
Tsao, Ming-Sound, 1039
Tsarbopoulos, A., 836
Tsonis, Panagiotis A., 100
Tsuda, Hiroyuki, 821
Tsuji, Akihiko, 238
Tuchel, Tammy, 891

Ueda, Kunihiro, 472
Uemura, Naomi, 1154
Uratsuji, Masaaki, 250
Urry, Dan W., 1061
Uwajima, Takayuki, 1169
Uyeda, Kosaku, 949

Vale, Wylie, 844
Van Berkel, Theo J. C., 1288
van Breemen, C., 1410
van Breemen, Cornelis, 677
van den Eijnden-van Raaij, A. J. M., 16
van der Veen, Eduard A., 1390
van Haeften, Timon W., 1390
van Koppen, Chris J., 42
Van Renterghem, Catherine, 977
Van Roost, Emiel, 364
Van Snick, Jacques, 364
Van Waas, Marieke P., 1288
van Zoelen, E. J. J., 16
Vavrin, Zdenek, 87
Vergnolle, C., 37
Verma, Mukesh, 1159
Vermylen, J., 1190
Vertut-Doi, A., 692
Vigne, Paul, 977
Vinnedge, L., 1341
Vogler, William R., 1000

Wada, Akihito, 828
Wada, Kenji, 488
Wakabayashi, Keiji, 494
Wallace, John C., 196
Wang, Jia-Fang, 718
Wang, L-M., 558
Watanabe, Kazuhito, 75
Watanabe, Masae, 301
Weber, Barbara L., 395
Weber, D. K., 558
Wei, Lisa L., 278
Weinstein, I. B., 590
Weinstein, Joel, 271
Weisgraber, Karl H., 1212
Weissman, Chana, 727
Whelan, J., 1348
White, John F., 1000
Whitfield, J. F., 762
Wildmann, Johannes, 1436
Winkler, James D., 521
Wiseman, David M., 793
Wiseman, Jeffery S., 1117
Wixler, Linda L., 81
Wollberg, Z., 1104
Wood, William M., 278
Wright, Marianne, 875

Xu, Z.-C., 1296

Yagi, Shigeru, 1164
Yamada, Shuhei, 1, 9
Yamada, Takashi, 346
Yamaguchi, Mutsuo, 24
Yamaguchi, Toru, 908
Yamamoto, Ikuo, 75
Yamamoto, Katsuhiko, 670
Yamamura, Hirohei, 851
Yanagawa, Norimoto, 1226
Yang, X-Y., 590
Yasuda, T., 558
Yip, Cecil C., 321
Yokota, Jun, 828
York, D., 1051
Yoshida, M. C., 558
Yoshida, Teruhiko, 618, 828
Yoshimura, Hidetoshi, 75
Yoshinari, Tomoko, 183

Zheng, Bin, 1000
Zhou, Yi-Fu, 1336
Zijlstra, Freek J., 1288

CUMULATIVE SUBJECT INDEX FOR VOLUMES 150–157

A

Abelson murine leukemia virus
homologous lupus-related transcript, detection in mice, **155**, 295
Abscisic acid
enhancement of phospholipid vesicle aggregation and fusion, **156**, 511
ABTS, *see* 2,2′-Azinobis(3-ethylbenzothiazoline-6-sulfonic acid)
Acatalasia
molecular defect in, analysis in fibroblasts (human), **153**, 59
Acetaldehyde
binding to ethanol-inducible cytochrome P450IIE1 *in vivo* (rat liver), **154**, 584
Acetoacetate–CoA ligase
cytosolic, effect of olive oil feeding (rat), **153**, 422
Acetoacetyl-CoA ligase, *see* Acetoacetate–CoA ligase
Acetoacetyl-CoA thiolase, *see* Acetyl-CoA acetyltransferase
Acetylation
histone H1 in sensitive and resistant colon adenocarcinoma cell lines, effects of doxorubicin (human), **155**, 1221
lysine residues on somatotropin, effect on affinity for somatogenic receptors (human), **150**, 391
role in interaction of HMG1 proteins and heterologous and homologous DNA polymerases *in vitro* (bovine thymus, Guerin ascites tumor cells), **154**, 918
Acetylcholine receptors
muscarinic
antagonist propylbenzilylcholine mustard, inhibition and labeling of renal Na^+/H^+ exchanger (rat), **157**, 921
subtype M_2, interaction with agonists, selective role of sialic acid (rat), **150**, 673
Acetylcholinesterase
glycosylinositol phospholipid anchor, detection of alkylacylglycerol molecular species (bovine erythrocytes), **150**, 271
Acetyl-CoA acetyltransferase
cytosolic, effect of olive oil feeding (rat), **153**, 422
N-Acetylgalactosamine
–galactose, specific macrophage lectin, homology with hepatic asialoglycoprotein binding protein (rat), **155**, 720
reducing-terminal, oligosaccharides with, release from mucus glycoprotein in *Streptomyces* sp. OH-11242 culture medium by endoglycosidase, **151**, 422
N-Acetylgalactosamine-6-sulfatase
phosphorylation in transplantable lung cancer (human), **150**, 163
N-Acetyl-β-glucosaminidase
ischemia-induced leakage from lysosomes, effects of sodium channel blocker SUN 1165 (canine heart), **157**, 433
N-Acetylglucosaminyl-1-phosphate transferase
gene amplification in tunicamycin-resistant CHO cells, **156**, 1063
N-Acetylglucosaminyltransferase III
high expression in 3′-methyl-4-dimethylaminoazobenzene-induced and ascites hepatoma (rat), **152**, 107
N-Acetylglutamate synthetase
hepatic mitochondrial, effects of sodium benzoate (rat), **151**, 872
β-*N*-Acetylhexosaminidase
α-chain
abnormal mRNA in Ashkenazi Jewish patients with Tay-Sachs disease: analysis of splicing defect due to exon–intron junctional mutation, **153**, 463
gene mutation identified in Puerto Rican patient with GM_2 gangliosidosis B1 variant, wide geographic and ethnic distribution, **156**, 1015
lysosomal, impaired proteolytic processing in cultured fibroblasts from patients with infantile generalized *N*-acetylneuraminic acid storage disease, **152**, 83
N-Acetylneuraminic acid storage disease
infantile generalized, impaired proteolytic processing of lysosomal *N*-acetyl-β-hexosaminidase in cultured fibroblasts (human), **152**, 83
Acetylpolyamine amidohydrolase
crystallization and properties (*Mycoplana bullata*), **157**, 1169
Acid phosphatase
modification of opioid receptor activity in neuroblastoma × glioma hybrid cells, **152**, 1369
Aciduria
mevalonic, severe form, effect on isoprenoid lipid levels (human), **152**, 857
Acquired immune deficiency syndrome
anti-HIV effect of 3′-fluorothymidine, analysis in human cell lines, **153**, 825
associated coenzyme Q_{10} biochemical deficiencies, exploratory treatment (human), **153**, 888
associated retrovirus HIV
antiviral agents 3′-azido-3′-deoxythmidine and 3′-azido-2′,3′-dideoxyuridine, 5′-phosphates, interaction with thymidylate synthase (*Hymenolepis diminuta*, mouse), **155**, 1418
2′,3′-dideoxycytidine inhibitor, structural features, **151**, 608
DNAs, homologous recombination in cultured cells, analysis of influencing factors (human), **157**, 1051

*Boldface numbers indicate appropriate volume; lightface numbers indicate pagination.

monoclonal antibodies to envelope glycoproteins, production and characterization *in vitro*, **155**, 1105
potent and selective antiviral activity of carbocyclic nucleoside analog *in vitro*, **156**, 1046
replication, selective inhibition by fuchsin acid *in vitro*, **155**, 1404
reverse transcriptase inhibitor 3′-azido-3′-deoxythymidine crystal structure: conformation and sandwiching of bases by azido groups, **152**, 351
type 1
infected CD4-positive cells, augmentation and stable expression (human), **155**, 1346
protease peptide cleavage specificity, sufficiency for processing gag and pol polyproteins, **156**, 297
treatment agent 3′-azido-3′-deoxythymidine, structural features: implications of analog 2′,3′-dideoxythymidine permeation of erythrocyte membrane by nonfacilitated diffusion (human), **154**, 825
4′-(9-Acridinylamino)methanesulfon-*m*-aniside, *see* Amsacrine
Acrosome reaction
role of protein kinase C (ram spermatozoa), **155**, 901
ACTH, *see* Adrenocorticotropin
Actin
ADP-ribosylation by *Clostridium spiroforme* binary toxin (Vero cells), **152**, 1361
binding protein, phosphorylation, protection against proteolysis by calcium-dependent sulfhydryl protease (human platelets), **151**, 355
and/or calmodulin, photocrosslinking to chicken gizzard caldesmon, **156**, 1033
cation-binding sites: structural relationship between antigenic epitopes and cation exchange (rabbit, scallop), **152**, 368
covalently crosslinked to brain actin-depolymerizing factor through exposed sulfhydryls, inhibition of deoxyribonuclease I (chicken embryo), **155**, 890
fibrous form, bundles, induction by 35-kDa fraction from smooth muscle caldesmon (chicken gizzard), **155**, 808
15-kDa binding region in caldesmon, identification by chemical crosslinking (chicken, turkey gizzard), **154**, 564
–myosin system in platelets, effects of gelsolin (pig), **155**, 91
thiol group reactivity and polymerization in presence of ATP analogs, analysis, **155**, 962
Actin-depolymerizing factor
cerebral, crosslinked to actin through exposed sulfhydryls, inhibition of deoxyribonuclease I (chicken embryo), **155**, 890
Actinomycin D, *see* Dactinomycin
Activin A
modulation of multiple types of anterior pituitary cells (rat), **157**, 48
stimulation of
FSH secretion from gonadotropin-releasing hormone-desensitized pituitary cells (rat), **151**, 1099
insulin secretion in pancreatic islets (rat), **156**, 335
Activin A receptors
on leukemic K562 cells, characterization (human), **157**, 844
N-Acylation
pentapeptides, effect on antagonist activity against substance P (guinea pig ileum), **156**, 323
tRNA *in vitro*, inhibition by adenosine antibodies, **155**, 1381
Acyl-CoA
long-chain, inhibition of platelet aggregation (human), **156**, 1020
modulation of diacylglycerol activation of protein kinase C (rat brain), **152**, 987
Adenine nucleotides
binding proteins, homology with histone H1 variants, **153**, 783
entrapment, correlation to F_1-ATPase inhibition by IF_1 protein (porcine cardiac mitochondria), **152**, 1319
Adenosine
antibodies, inhibition of *in vitro* amino acylation and translation, **155**, 1381
inhibition of phospholipase A_2 activation by phenylephrine (hamster adipocytes), **152**, 886
regulation of neutrophil superoxide anion generation, calcium requirements, comparison with ATP and ATPγS (human), **154**, 746
Adenosine 3′-phosphate 5′-phosphosulfate
transporter, reconstitution into liposomes (rat brain), **155**, 1271
Adenosine receptors
A_1, high-affinity antagonist, site of action (rat adipocyte membranes), **153**, 939
Adenosylhomocysteinase
amino acid sequence, deduction from cDNA (*Dictyostelium discoideum*), **153**, 359
S-Adenosyl-L-homocysteine hydrolase, *see* Adenosylhomocysteinase
S-Adenosyl-L-methionine
protection of hippocampal CA1 neurons from ischemic neuronal death (rat), **150**, 491
S-Adenosylmethionine decarboxylase
precursor, detection in prostate extracts (rat), **150**, 788
Adenylate cyclase
β-adrenoreceptor-coupled, *in vitro* effects of dexamethasone (rat adipocytes), **153**, 489
calmodulin-dependent, interspecific relationships (*Bacillus anthracis*, *Bordetella pertussis*), **157**, 1027
catalytic activity increase, role in estrogen promotion of white fat cell lipolytic activity (rat), **154**, 1151
catalytic unit, conformational changes induced by receptor and G-protein stimulation, detection with tosyl-lysyl chloromethylketone (rat striatum), **156**, 855
effects of GTP-binding proteins, analysis in v-Ki-*ras*-transformed NIH/3T3 fibroblasts, **153**, 1214
induction by corticosteroid-binding globulin in mammary carcinoma cells (human), **153**, 1012
inhibition
in platelets during reversible shape change (human), **152**, 649
by synthetic peptides based on calmodulin-binding domain of myosin light chain kinase (*Bordetella pertus*

sis, bovine brain), **156**, 860
pituitary membrane, activity and stability, enhancement by phorbol esters, **151**, 16
regulation
in adipocyte membranes from exercise-trained rat, mechanism, **151**, 1262
role of dopamine and gramine (*Paracentrotus lividus*, *Sphaerechinus granularis*), **154**, 758
in 235-1 clonal pituitary cells, effect of interleukin 1β, **155**, 1089
Adenylylation
role in regulation of glutamine synthetase, comparison with phosphorylation (*Mycobacterium phlei*), **155**, 1133
Adipocytes
catecholamine-induced lipolysis, enhancement by dexamethasone: direct *in vitro* effects on β-adrenoreceptor-coupled adenylate cyclase system (rat), **153**, 489
from exercise-trained rat, adenylate cyclase regulatory mechanism, analysis, **151**, 1262
insulin action, relationship to phorbol ester-activated pathways (rat), **154**, 171
intact, tyrosine phosphorylation, induction by insulin (rat), **155**, 1181
lipoprotein lipase secretion, short-term stimulation by insulin (mouse, rat), **154**, 982
norepinephrine-stimulated lipolysis, inhibition by lipid peroxidation, associated decrease in β-adrenergic receptors (rat epididymis), **150**, 802
perisinusoidal, hyaluronic acid synthesis and secretion *in vitro* (rat liver), **151**, 222
phosphorylation of phosphoprotein phosphatase inhibitor-2 (rat), **150**, 197
precursor 30A-5 cells, ATP synthesis, stimulation by cachectin/tumor necrosis factor, **157**, 1015
white, lipolytic activity, promotion by estrogens, role of increased adenylate cyclase catalytic activity (rat), **154**, 1151
Adipose tissue
brown
analysis of atrial natriuretic factor receptors (rat), **156**, 1000
binding affinities and action of β-adrenergic agonist BRL 37344, discrepancies (rat), **156**, 375
iodothyronine 5′-deiodinase, evidence for differential physiological modulation during perinatal period (rat), **156**, 493
insulin receptor structure and function, comparison with hepatic and muscle forms (human), **151**, 123
omental and subcutaneous, comparative corneal angiogenic activity (rabbit), **153**, 347
ADP (adenosine 5′-diphosphate)
–ATP exchange in hepatic mitochondria, enhancement by helium–neon laser irradiation (rat), **156**, 978
intraliposomal, effects on kinetics of reconstituted cytochrome-*c* oxidase from bovine heart and *Paracoccus denitrificans*, **153**, 525
ADP-ribose
protein bonds, formation of different types by botulinum C2 toxin, botulinum ADP-ribosyltransferase C3, and pertussis toxin (human platelets), **156**, 361
ADP-ribosylation
cellular actin by *Clostridium spiroforme* binary toxin, **152**, 1361
endogenous, analysis in platelets (human), **157**, 1323
40-kDa protein by pertussis toxin in smooth muscle cells (rat aorta), **150**, 841
in GH1 cells, induction by cholera toxin, **150**, 323
Nb_2 lymphoma cell membrane proteins by bacterial toxins, effects of prolactin, **156**, 776
S-antigen by cholera toxin (bovine), **156**, 1160
22–24-kDa membrane protein distinct from $p21^{N\text{-}ras}$ by botulinum toxin D (HL-60 cells, human platelets), **155**, 263
ADP-ribosylation factor
cholera toxin, comparison with 24-kDa substrate for botulinum C3 ADP-ribosyltransferase (bovine brain), **152**, 957
ADP-ribosyltransferase
botulinum C3
and other toxins, types of ADP-ribose protein bonds formed, comparison (human platelets), **156**, 361
24-kDa protein substrate, comparison with cholera toxin ADP-ribosylation factor (bovine brain), **152**, 957
substrate, subcellular distribution and isoelectric heterogeneity (*Clostridium botulinum*), **150**, 1122
Adrenal gland
aldosteronoma and adjacent adrenal cells, differential redistribution of protein kinase C after stimulation with adrenocorticotropin and angiotensin II (human), **155**, 643
angiotensin II-binding proteins, biochemical and immunological properties, comparison with other tissues (rabbit), **156**, 1230
cortex, receptor binding and mitogenic activities of glycosylated and unglycosylated prolactin, comparison (pig), **155**, 1187
distribution of receptors for insulin and insulin-like growth factor I (rat), **154**, 138
^{3}H-thymidine incorporation into DNA of organ-cultured explants, effects of corticotropin and cysteamine (rat), **157**, 95
intact perfused, catecholamine release, voltage dependence of nitrendipine inhibition: evidence for dihydropyridine receptor coupling to calcium channels (cat), **153**, 912
α-Adrenergic receptors
type 1, number and surface accessibility in DDT_1 MF-2 smooth muscle cells, differential effects of norepinephrine and phorbol ester, **156**, 924
type 2, mediated cGMP formation in adrenocortical carcinoma cells, inhibition by phorbol ester (rat), **156**, 905
β-Adrenergic receptors
agonist BRL 37344, binding affinities and action in brown adipose tissue, discrepancies (rat), **156**, 375
agonist-stimulated cAMP generation in cardiac myocytes, inhibition by immune cytokine (rat), **150**, 1
characterization in Leydig's cells: mediation of (−)isoproterenol-stimulated testosterone production

(mouse), **151**, 1454
coupled adenylate cyclase system, *in vitro* effects of dexamethasone (rat adipocytes), **153**, 489
decrease in adipocytes, correlation with lipid peroxidation-induced inhibition of norepinephrine-stimulated lipolysis (rat epididymis), **150**, 802
down-regulation, terbutaline-induced, prevention by ketotifen (guinea pig lung), **152**, 1221
function, endotoxin-induced changes, role of platelet-activating factor (guinea pig lung), **152**, 527
regulation of Ca^{2+} fluxes, $[Ca^{2+}]_i$, and membrane transport in cardiac myocytes, role of polyamines as intracellular messengers (rat), **153**, 1179
type 2
density in CHO cells, relationship to receptor-mediated cAMP accumulation, **150**, 665
encoding gene, glucocorticoid response elements in 5′-noncoding region, requirement for glucocorticoid regulation of receptor mRNA levels (hamster), **154**, 676
Adrenocorticotropin
and angiotensin II, stimulation of aldosteronoma cells and adjacent adrenal cells, differential effects on protein kinase C redistribution (human), **155**, 643
and cysteamine, effects on ^{3}H-thymidine incorporation into DNA of organ-cultured adrenal explants (rat), **157**, 95
inhibiting peptide, purification and structure (human granulocytes), **155**, 524
secretion in conscious freely-moving rats, stimulation by interleukin 6, **155**, 1459
stimulation of phosphatidylinositol–glycan turnover (bovine glomerulosa cells), **157**, 585
Adrenocorticotropin receptors
mediation of leukocyte cAMP induction (mouse), **157**, 1205
Adrenodoxin reductase, *see* Ferredoxin–$NADP^+$ reductase
Adrenoleukodystrophy
X-linked, associated deficient oxidation of very-long-chain fatty acids, role of impaired peroxisomal activation of fatty acids (human), **153**, 618
Adriamycin, *see* Doxorubicin
Affinity chromatography
deoxycytidine kinase, avoidance of structural and kinetic artifacts arising from limited proteolysis (human), **156**, 92
Aflatoxin B_1
highly specific cytochrome P450, monoclonal antibodies to, preparation and characterization (hamster liver), **153**, 441
^{3}H-labeled, quantitative tritium exchange during penetration through isolated skin (human), **153**, 395
African swine fever virus
DNA synthesis, inhibition by (*S*)-9-(3-hydroxy-2-phosphonylmethoxypropyl)adenine (monkey kidney cells), **154**, 27
Agarose
–histone, tight binding of activated glucocorticoid receptor complexes, **151**, 763
Age
effects on
crosslinking of skin collagen (bovine, human), **152**, 898
heat-shock protein gene transcription in peripheral blood mononuclear cells (human), **157**, 580
hepatocyte plasma membrane fluidity (rat), **156**, 840
phenobarbitone-induced cytochrome P450(b+e) gene expression (rat), **157**, 1403
regional distribution of hormones in anterior pituitary (male rat), **152**, 1213
senescence, identification of hepatic proteins as potential biomarkers (rat), **154**, 1130
AIDS, *see* Acquired immune deficiency syndrome
Ajoene
inhibition of platelet aggregation, role of hemoprotein (bovine), **153**, 479
Alanine
carrier protein, partial purification from intestinal brush border membranes and functional reconstitution into proteoliposomes (rabbit), **152**, 1158
Albinism
associated tyrosinase gene expression, analysis (mouse), **155**, 470
Albumin
and IgE, encoding genes, methylation by *N*-nitrosodimethylamine, comparison (rat liver), **155**, 14
-like protein, synthesis and secretion by cultured tracheal gland serous cells (bovine), **155**, 857
mammalian, interaction with pyrroloquinoline quinone, detection by nitroblue tetrazolium reduction, **153**, 353
mRNA, insulin-mediated post-transcriptional regulation (rat liver), **154**, 1081
synthesis in free hepatic ribosomes, increase during acute-phase reaction (rat), **152**, 744
Alcohol dehydrogenase
electromorphs, molecular analysis in wild-type and transformed *Drosophila melanogaster*, **150**, 655
glycation, *in vivo* evidence (equine liver), **152**, 711
testis-specific, isolation, characterization, and developmental changes (golden hamster), **156**, 38
Aldehyde dehydrogenase
recombinant, produced by *Escherichia coli*, purification and characterization (rat liver), **152**, 940
signal peptide, amino acid sequence (rat hepatic mitochondria), **150**, 1083
Aldehyde reductase
mRNA and genes, characterization (rat), **153**, 1051
Aldose reductase, *see* Aldehyde reductase
Aldosterone
angiotensin II-induced adrenal synthesis, mediation by 12-hydroxyeicosatetraenoic acid: role of diacylglycerol as source of arachidonic acid for 12-HETE formation (human), **156**, 717
producing adrenocortical adenoma, absence of atrial natriuretic peptide receptors (human), **152**, 37
Alkaline phosphatase
hepatic plasma membrane, distinction from protein phosphotyrosine phosphatase catalyzing dephosphorylation of insulin receptors (rat), **151**, 633
inhibition by insulin in cerebral microvessels (bovine), **150**, 583
intestinal-like primitive form, evidence for expression in

intestinal 407 cells, **156**, 563
Alkylacylglycerol
molecular species, detection in glycosylinositol phospholipid anchor of acetylcholinesterase (bovine erythrocytes), **150**, 271
Alkylation
biological, and biooxidation of anthracene, analysis *in vivo* and *in vitro* (rat liver, subcutaneous tissue), **151**, 1441
DNA, dimethylnitrosamine-induced, repair, inhibition by chronic ethanol consumption (rat), **152**, 423
Alkylglycerides
synthetic, inhibition of protein kinase C activation by diacylglycerols, **151**, 291
7-Alkylguanines
release from haloethylnitrosourea-treated DNA by 3-methyladenine-DNA glycosylase II (*Escherichia coli*), **155**, 1261
1-*O*-Alkyl-2-*O*-methyl-*sn*-glycero-3-phosphocholine
resistance in HL-60 cells after differentiation to granulocytic form (human), **156**, 1
Allene oxide cyclase
catalyzing 12-oxo-10,15(*Z*)-phytodienoic acid biosynthesis, identification in corn homogenate, **156**, 543
Aluminum
Al^{3+}, and F^- ternary hydroxide complexes, detection in neutral solutions, **155**, 1194
binding to 200-kDa neurofilament protein (bovine, human spinal cord), **152**, 598
effect on phosphoinositide hydrolysis by bovine cardiac phosphoinositidase C, **155**, 203
ionic, effect on tubulin polymerization and associated guanosine triphosphate hydrolysis (bovine brain), **151**, 1025
Alzheimer's disease
amyloid β-protein
gene duplication, analysis by polymorphic restriction fragments (human), **150**, 75
gene fine mapping (human), **151**, 1
precursor: homology with amyloid protein amino acid sequence from hereditary cerebral hemorrhage with amyloidosis-Dutch type (human), **151**, 1150
amyloid protein precursor and senile plaques, recognition by antisera to amino-terminal peptide (human), **156**, 432
cerebral paired helical filaments, identification of modified form of microtubule-associated tau protein as main component (human), **154**, 660
differential expression of three types of amyloid protein precursor mRNA (human), **157**, 472
human cerebral extracts, stimulation of survival of cerebral cortical neurons from neonatal rats, **150**, 1263
α-Amidating enzyme
in adrenal chromaffin granules, characterization with trinitrophenylated substrate (bovine), **151**, 499
peptide C-terminal, encoding cDNA, cloning and sequencing (*Xenopus laevis* skin), **150**, 1275
Amidation
peptides, evidence for multiple enzymatic forms (porcine pituitary), **154**, 1293
Amiloride
analogs, effects on agonist-induced protein phosphorylation and serotonin release in platelets (human), **154**, 101
effect on
activation of S_6 kinase by angiotensin II in cultured vascular smooth muscle cells (rat), **151**, 583
sensitivity of bovine adrenal particulate guanylate cyclase to rat atrial natriuretic factor, **152**, 1263
Amine oxidase (copper-containing)
assay with putrescine and nitroblue tetrazolium, in analysis of pyrroloquinoline quinone locus in quinoproteins, **154**, 1330
structural domains, analysis (bovine serum), **154**, 66
Amine oxidase (flavin-containing)
type B, cDNA molecular cloning (rat liver), **157**, 970
types A and B, amino acid sequence analysis (bovine liver, human placenta), **156**, 445
Amino acid composition
anticoagulant polypeptides from snake venom, identification as cardiotoxins (*Naja nigricollis*), **150**, 1012
calcimedin and calelectrins, correlation of relatedness, **156**, 193
endosperm tubulin, comparison with porcine neurotubulin (*Haemanthus katherinae*), **156**, 304
α-galactosidase (*Escherichia coli*), **151**, 236
glucose/xylose isomerase (*Chainia* sp.), **155**, 411
glycoprotein IX (human platelets), **156**, 931
lethal toxin from *Heloderma horridum horridum* venom, **154**, 613
multiple fumarase proteins (*Escherichia coli*), **153**, 1236
neuropeptides in adipokinetic/red pigment-concentrating hormone family (horsefly), **151**, 656
Amino acids
D-form, additional substitutions in dermorphin analogs, effects on resistance to enzymatic degradation *in vitro* (rat brain), **156**, 125
interaction with pyrroloquinoline quinone, detection by nitroblue tetrazolium reduction, **153**, 353
side chains, simple formula for solvent-accessible areas, **156**, 792
Amino acid sequence
S-adenosyl-L-homocysteine hydrolase, deduction from cDNA clone (*Dictyostelium discoideum*), **153**, 359
adrenocorticotropin-inhibiting peptide (human granulocytes), **155**, 524
aldehyde dehydrogenase signal peptide (rat hepatic mitochondria), **150**, 1083
amino-terminal
anticoagulant polypeptides from snake venom, identification as cardiotoxins (*Naja nigricollis*), **150**, 1012
carboxyl ester lipase (human pancreas), **155**, 950
clusterin from primary Sertoli cell-enriched culture medium (rat), **155**, 398
α-galactosidase (*Escherichia coli*), **151**, 236
glycoprotein IX (human platelets), **156**, 931
insulin-like growth factor-binding proteins (rat serum), **156**, 1187
lethal toxin from *Heloderma horridum horridum* venom, **154**, 613
multiple fumarase proteins (*Escherichia coli*), **153**, 1236

phospholipase A_2 from synovial fluid, homology to placental enzyme (human), **157**, 488
plasma hemopexin, species comparison (chicken, human, rabbit, rat), **155**, 622
retinoic acid-binding protein 16.2-kDa cellular form (chicken embryo), **157**, 1302
tyrosine 3-monooxygenase catalytic domain (bovine adrenal gland), **151**, 1446
amyloid protein from hereditary cerebral hemorrhage with amyloidosis-Dutch type: homology with Alzheimer's β-protein precursor (human), **151**, 1150
angiotensin-converting enzyme inhibitor (tuna muscle), **155**, 332
archaerhodopsin (*Halobacterium* sp. aus-1), **151**, 1339
atrial natriuretic peptide
in chicken heart, **155**, 1330
in frog heart, **155**, 1338
brain natriuretic peptide-32 (porcine brain), **155**, 726
cAMP-dependent protein kinase regulatory subunit RII_β, deduction from cDNA (rat ovarian granulosa cells), **154**, 705
carboxypeptidase N active subunit, N-terminus and selected tryptic peptides, comparison with other carboxypeptidases (human plasma), **154**, 1323
2′,3′-cyclic-nucleotide 3′-phosphodiesterase, deduction (human brain), **152**, 837
cytochrome P450C-M/F isozymes, comparison (rat liver), **156**, 681
cytochrome $P450_{14DM}$ and mutated form, deduction from cloned DNAs (yeast), **155**, 317
estrogen receptor and DNA-binding domain of tetracycline repression, comparison (human), **150**, 463
ferredoxin, deduction from cDNA (chicken testis), **155**, 379
fumarase (porcine heart), **153**, 435
gastric H^+,K^+-ATPase, determination from cloned cDNA (pig), **157**, 203
hexokinase, homologous amino- and carboxyl-terminal halves (human kidney), **157**, 937
high-molecular-weight brain natriuretic peptide from cardiac atrium (pig), **157**, 402
histone H1 variants and adenine nucleotide-binding proteins, comparison, **153**, 783
H protein, deduction from cDNA clone (human liver), **151**, 758
human chorionic gonadotropin β-subunit cleavage product, **154**, 626
insulin-like growth factor-binding protein, deduction from cDNA (human), **152**, 1289; *erratum*, **155**, 1485
internal, proteins electroblotted to polyvinyldifluoride membranes, determination by *in situ* cyanogen bromide cleavage method, **155**, 1353
15-lipoxygenase, deduction from cDNA clone (human reticulocytes), **157**, 457
lymphocyte-derived neutrophil-activating peptide (human), **151**, 883
lymphocyte pore-forming protein (mouse), **156**, 740
lysosomal sphingolipid activator protein 1, comparison with influenza virus neuraminidase, implications for SAP-1 structure, **155**, 32
macrophage colony-stimulating factor produced by T lymphoblastoid cells (human), **152**, 1401
mitochondrial creatine kinase from striated muscle: distinction from isoprotein in brain (chicken), **151**, 408
monoamine oxidase A, analysis (human placenta), **156**, 445
monoamine oxidase B
in bovine liver, **156**, 445
deduction from cDNA (rat liver), **157**, 970
NCA-50, identity to NCA cDNA deduced sequences and role of post-translational modifications (human breast tumor hepatic metastasis), **153**, 1105
neuromedin U (rat intestine), **156**, 355
neuropeptide with hypertrehalosemic and adipokinetic activities (corn earworm), **155**, 344
nonspecific cross-reacting antigen, deduction from cDNA clone (human lung carcinoma cells), **150**, 89
nonsteroid binding component of estrogen receptor (bovine uterus), **151**, 1156
parathymosin, species comparison (bovine, rat liver), **155**, 539
partial, rat topoisomerase I, comparison with predicted sequences for human and yeast enzymes, **154**, 358
peptides inhibiting muscle contraction (*Mytilus edulis*), **152**, 1376
peptide YY (human colon), **157**, 713
pregnancy-specific β_1-glycoprotein
and carcinoembryonic antigen-related proteins, comparison (human), **154**, 130
homology with carcinoembryonic antigen (human), **152**, 762
recombinant soluble interleukin 2 receptor (human), **154**, 372
signal peptide of mitochondrial nicotinamide nucleotide transhydrogenase, deduction from corresponding mRNA sequence (bovine heart), **157**, 24
sterol carrier protein SCP_2 (rat liver), **154**, 476
synexin and synaptophysin, repeating patterns, comparison (bovine liver), **152**, 1298
synthetic C5a anaphylatoxin, confirmation (pig), **151**, 1285
transformation-sensitive 47-kDa collagen-binding heat-shock protein (chicken embryo), **153**, 428
transmembrane protein encoded by mRNA expressed in F9 cells and down-regulated by tumor-promoting phorbol ester (mouse), **157**, 548
tryptic peptides generated from estrogen receptor (bovine), **156**, 116
24-kDa iron–sulfur protein subunit of NADH dehydrogenase, deduction from cDNA clone, (rat hepatic mitochondria), **157**, 914
γ-Aminobutyric acid
and benzodiazepine, receptor protein major peptide subunits, identification of binding sites for both ligands (bovine, human, rat brain), **153**, 1006
γ-Aminobutyric acid aminotransferase
inactivation by (*S,E*)-4-amino-5-fluoropent-2-enoic acid, mechanism (porcine brain), **150**, 942
γ-Aminobutyric acid receptors
GABA-A, α-subunit cDNA clone, isolation and sequencing (human), **156**, 1039

N^4-Aminocytosine
mispairing ability, *ab initio* molecular orbital study, **153**, 552
3-Amino-1,4-dimethyl-5*H*-pyrido[4,3-b]indole
inhibition of tyrosine hydroxylase and aromatic-L-amino-acid decarboxylase (PC12h cells), **157**, 494
9-Aminoellipticine
–octathymidylate complex, covalently linked, synthesis, **152**, 56
8-[4-[[[[(2-Amino-ethyl)-amino]carbonyl]methyl]oxy]phenyl]-1,3-dipropylxanthine, *see* XAC
2-Aminoethylphosphonate
biosynthetic pathway, analysis in *Tetrahymena pyriformis*, **153**, 177
(*S*,*E*)-4-Amino-5-fluoropent-2-enoic acid
inactivation of γ-aminobutyric acid aminotransferase, mechanism (porcine brain), **150**, 942
Amino groups
dynorphin A (1-13)-derived peptide, solvent-exposed, analysis by FT–IR and ^{1}H NMR spectroscopy, **151**, 1220
N-(6-Aminohexyl)-5-chloro-1-naphthalenesulfonamide hydrochloride
effect on primary, secondary, and cloned cytotoxic T cells (mouse), **154**, 1280
inhibition of free arachidonic acid production in activated alveolar macrophages (rabbit), **156**, 947
2-Amino-6-methyldipyrido[1,2-*a*:3′,2′-*d*]imidazole
2-hydroxyamino derivative, oxidation to 2-nitroso form reactive with hemoglobin thiol group, **151**, 1326
3-Amino-1-methyl-5*H*-pyrido[4,3-b]indole
inhibition of tyrosine hydroxylase and aromatic-L-amino-acid decarboxylase (PC12h cells), **157**, 494
8-Amino octanoic acid
substituted atrial natriuretic factor analogs, pharmacological profile (rat), **152**, 1070
Ammonium
acute intoxication, protective effects of
long-term ammonium ingestion (rat), **153**, 979
protein-free and high-protein diets (rat), **156**, 506
Ammonium acetate
long-term ingestion, protective effects on acute ammonium intoxication (rat), **153**, 979
Amnion
cultured cells, lipocortin and prostaglandin production, stimulation by dexamethasone (human), **151**, 137
AMP (adenosine 5′-monophosphate)
differential effects on muscle phosphofructokinase activation by α-glucose 1,6-bisphosphate and fructose 2,6-bisphosphate (rat), **157**, 664
Amphomycin
conformational change on Ca^{2+} binding, circular dichroism and monolayer study, **150**, 384
Amphotericin B
inhibition of Na^+/K^+ pump (human erythrocytes), **157**, 692
sterol binding and cytotoxicity, effects of detergent sucrose monolaurate (murine erythrocytes, fibroblasts), **154**, 954; *erratum*, **156**, 1061
m-AMSA, *see* Amsacrine
Amsacrine
and bleomycin, related synthetic compound, DNA-binding and -cleaving properties, **152**, 695
Amylase
maltohexaose-producing, encoding gene from alkalophilic *Bacillus* sp. #707, nucleotide sequence and structural similarity to liquefying-type α-amylases, **151**, 25
secretion by
isolated pancreatic acini
effects of fatty acids: activation of protein kinase C type III-α by linoleic acid (rat), **153**, 67
inhibition by cholecystokinin, mechanism (rat), **154**, 1314
stimulation by *Pseudomonas aeruginosa* cytotoxin, associated decrease in mRNA levels (rat), **152**, 688
parotid gland, role of protein kinase C (rat), **150**, 1309
α-Amylase
Bacillus stearothermophilus, α-factor-directed synthesis in yeast, **152**, 76
liquefying-type, structural similarity of maltohexaose-producing amylase encoded by gene from alkalophilic *Bacillus* sp. #707, **151**, 25
n-Amyl bromide
and other general anesthetics, effects on nerve impulse blockade and on proteinaceous target site, comparison (squid giant axon), **154**, 47
Amyloid
fibrils
formed from segment of pancreatic islet amyloid, analysis, **155**, 608
isolated from hereditary amyloidosis patient, variant apolipoprotein A-I identification as major constituent, **156**, 762
from patients with hereditary cerebral hemorrhage with amyloidosis of Dutch type, amino acid sequence homology with Alzheimer's β-protein precursor, **151**, 1150
β-protein, Alzheimer's disease-associated
fine mapping (human), **151**, 1
gene duplication, analysis by polymorphic restriction fragments (human), **150**, 75
precursor
mRNA, detection of three types in brain: differential expression in Alzheimer's disease (human), **157**, 472
and senile plaques, recognition by antisera to amino-terminal peptide (human), **156**, 432
in senile systemic amyloidosis, derivation from normal prealbumin (human), **154**, 648
Amyloid A
serum, *see* Serum amyloid A
Amyloidosis
Dutch type, amyloid protein from hereditary cerebral hemorrhage with, amino acid sequence: homology with Alzheimer's β-protein precursor (human), **151**, 1150
hereditary, fibrils isolated from patient, variant apolipoprotein A-I identification as major constituent, **156**, 762
senile systemic, associated amyloid fibril protein, derivation from normal prealbumin (human), **154**, 648

Amyloid P
serum, *see* Serum amyloid P
Anabaena cylindrica
detection of GTP-binding proteins, **151**, 215
Anaphylatoxin
C5a, synthesis by solution procedure, structure confirmation (pig), **151**, 1285
Anaplasma marginale
nucleic acid levels in infected and uninfected erythrocytes during experimental anaplasmosis (bovine), **152**, 30
Anapterin
identification in hyperphenylalaninemia patient, **153**, 715
Androgen receptors
encoding cDNA, cloning, structure, and expression (human T47D cells), **153**, 241
related abundant 56-kDa protein with low-affinity androgen binding from genital skin fibroblasts, analysis (human), **155**, 907
Androstenedione
aromatization and 19-hydroxylation by cytochrome P450 (rat brain), **150**, 311
19-^{14}C-labeled, application in aromatase assay and analysis of aromatization reaction mechanism (human), **157**, 81
Angiogenesis
induction by omental and subcutaneous adipose tissue, comparison (rabbit cornea), **153**, 347
inhibition *in vitro* by lymphotoxin and interferon γ (bovine, human), **155**, 429
macrophage-mediated, inhibition by anti-rheumatic agents gold sodium thiomalate and auranofin (rat cornea), **154**, 205
monocyte-mediated, induction by transforming growth factor β (human), **157**, 793
Angiogenin
modification by bromoacetate at pH 5.5, identification of modification sites (human), **156**, 530
Angiotensin I
conversion to angiotensin II by renal cathepsin A isoenzymes (pig), **154**, 1122
Angiotensin II
and adrenocorticotropin, stimulation of aldosteronoma cells and adjacent adrenal cells, differential effects on protein kinase C redistribution (human), **155**, 643
amiloride-sensitive activation of S_6 kinase in cultured vascular smooth muscle cells (rat), **151**, 583
aromatic ring electrostatic interactions, calculation of magnitude and orientation, **153**, 1296
binding proteins, biochemical and immunological similarity in different organs (rabbit, rat), **156**, 1230
formation from angiotensin I by renal cathepsin A isoenzymes (pig), **154**, 1122
induction of
c-*fos* gene expression in cultured vascular smooth muscle cells, role of protein kinase C activation and Ca^{2+} mobilization (rat), **150**, 52
phosphoinositidase activation in smooth muscle cells, inhibition by pertussis toxin (rat aorta), **150**, 841
phospholipase C-mediated phosphoinositide hydrolysis in vascular smooth muscle cells, effects of phorbol ester (rabbit), **156**, 846
modulation of prostaglandin E_2 production by renal glomeruli, role of protein kinase C (rat), **152**, 1481
soluble binding protein, detection and characterization (rabbit liver), **151**, 466
Angiotensin-converting enzyme, *see* Dipeptidyl carboxypeptidase I
Angiotensinogen
human recombinant, expression and characterization in heterologous eukaryotic cells, **156**, 1103
Aniline
oxidation by cytochrome P450-enriched *Streptomyces griseus* extracts, **157**, 1417
Anilinonaphthalenesulfonate
and Cibacron Blue, application as binding agents in isolation of lipoproteins from lamprey, mammalian, and piscine sera, **154**, 752
Anions
dependence of thiamin triphosphatase activation (eel electric organ), **154**, 942
Anorexia
inducing substances, production by intestinal flora (rat), **153**, 1167
Anthracene
bioalkylation and biooxidation, analysis *in vivo* and *in vitro* (rat liver, subcutaneous tissue), **151**, 1441
Antibacterial agents
DuP 721, effects on macromolecular synthesis (*Bacillus subtilis*), **150**, 965
Antibodies
adenosine, inhibition of *in vitro* amino acylation and translation, **155**, 1381
adrenocortical pregnenolone-binding protein, development (guinea pig), **150**, 456
anticardiolipin, separation from lupus anticoagulant on phospholipid-coated polystyrene column (human), **155**, 1001
binding to vesicles prepared with cholesteryl binding agent, evaluation of viability and specificity, **151**, 932
bone matrix protein, screening of cDNA expression library, in identification of proteins synthesized in bone cells (rat), **151**, 382
deoxyadenylate and deoxycytidylate, binding to double-stranded DNA, **154**, 118
endogenous, blocking atriopeptin effects, in development of autoimmunity: manipulation of atriopeptin responses (rat), **155**, 990
haloperidol, in immuno-photoaffinity labeling of D_2 dopamine receptors in striatal membranes (bovine), **155**, 930
insulin receptor, effects on embryo growth and muscle differentiation *in vivo* (chicken), **153**, 142
monoclonal, *see* Monoclonal antibodies
nonspecific cross-reacting, primary sequence, deduction from cDNA clone (human lung carcinoma cells), **150**, 89
polyclonal
in detection of opioid receptor molecular weight forms in rat brain and neuroblastoma–glioma hybrid cells, **150**, 237

to insulin-like growth factor inhibitor, recognition of IGF-binding proteins in serum (human), **156**, 783
responses to αs1-casein, analysis with proteolytic and synthetic peptides, strain comparisons (mouse), **154**, 876
70-kDa, from elastin-producing cells, reactive monoclonal antibody, generation and characterization (bovine ocular zonule), **151**, 822
transferrin receptor, disulfide linked to methotrexate derivative, cytotoxicity enhancement by monensin (human), **150**, 104
to viral proteins, production in response to uptake of α_2-macroglobulin–viral protein conjugates by macrophages (mouse), **150**, 883; *erratum*, **151**, 955
Anticoagulants
associated activity, isolation of heparan sulfates with (murine BALB/c 3T3, B16.F10 melanoma, cutaneous fibrosarcoma UV324 cells), **151**, 327
lupus, and anticardiolipin antibodies, separation on phospholipid-coated polystyrene column (human), **155**, 1001
Antigens
carcinoembryonic, *see* Carcinoembryonic antigen
CD2, mediated activation of $CD4^+$ T cells, enhancement of prostaglandin E_2-induced cAMP accumulation (human), **157**, 1396
CD3, phosphorylation in T lymphocytes, regulation by GTP-binding protein (human), **156**, 328
H-2D and H-2K, gene expression by PYS-2 teratocarcinoma cells (mouse), **157**, 648
histone-1-like, identification as nuclear envelope component in HEp-2 cells, **156**, 675
HLA class I, monoclonal antibodies
depletion of protein kinase C in phytohemagglutinin-activated T cells (human), **152**, 951
effects on protein kinase C kinetics in phytohemagglutinin-activated peripheral blood mononuclear and E^+ T cells (human), **156**, 46
inhibition of lymphocyte proliferation without affecting mitogen-dependent second messenger generation (human), **154**, 712
Ia, associated invariant chain gene in chronic lymphocytic leukemia cells, detection of multiple transcription initiation sites (human), **152**, 184
large T, simian virus 40, origin-binding forms, analysis for helicase activity (CV-1 cells), **153**, 249
MAC-1, role in fibrinogen binding to monocytes (human), **156**, 477
middle T, polyomavirus, associated phosphatidylinositol kinase, augmentation by protein kinase C (murine fibroblasts), **154**, 306
NCA-50, protein analysis: identity to NCA cDNA deduced sequences and role of post-translational modifications (human breast tumor hepatic metastasis), **153**, 1105
prostate, molecular cloning and characterization of cDNAs, **155**, 181
rat liver-specific, antibody-binding site, analysis, **152**, 1138
S-, ADP-ribosylation by cholera toxin (bovine), **156**, 1160
surface differentiation, sIgM and Bp35, lateral diffusion, acceleration by interferon α, measurement by fluorescence photobleaching (Daudi cells), **157**, 808
Antimony sodium gluconate
inhibition of type I DNA topoisomerase (*Leishmania donovani*), **152**, 605
α_2-Antiplasmin
C-terminal lysine residue, role in interaction with plasmin, **155**, 591
secretion, effect of tyrosine residue sulfation (HepG2 cells), **151**, 417
Antiserum
to amino-terminal peptide, recognition of Alzheimer's disease amyloid protein precursor and senile plaques (human), **156**, 432
Antithrombin III
heparan sulfates with affinity for, isolation (murine BALB/c 3T3, B16.F10 melanoma, cutaneous fibrosarcoma UV324 cells), **151**, 327
α1-Antitrypsin
-like gene 12 kb downstream of genuine α1-antitrypsin gene, cloning and characterization (human), **155**, 634
Aorta
angiotensin II-binding proteins, biochemical and immunological properties, comparison with other tissues (rabbit), **156**, 1230
endothelin vasoconstrictive action, molecular mechanism (rat), **157**, 977
KCl-induced contractile response, effect of phorbol ester (endotoxic rat), **150**, 1115
membranes, [^{3}H]propionyl-neuropeptide specific binding, characterization: comparisons with binding in rat brain and biological responses in rat vas deferens, **151**, 1213
production of inositol trisphosphate and tetrakisphosphate, stimulation by norepinephrine (rat), **156**, 240
rings, vasodilatory properties of mono-L-arginine-containing compounds (rat), **154**, 332
vasoconstrictive properties of endothelin and Bay K 8644 *in vitro*, comparison (rat), **156**, 186
Aphidicolin
synchronized BHK-21 cells, nuclear lamin synthesis, **156**, 205
Apigenin
effect on tyrosine-specific protein kinase activity of insulin and insulin-like growth factor I receptors (human placenta), **157**, 955
Apolipoprotein A-I
gene transcription, effect of triiodothyronine (rat liver), **154**, 997
intestinal secretion, stimulation by triiodothyronine (rat), **153**, 606
nonenzymatic glycation, effects on self-association and lipid-binding properties (human), **153**, 1060
variant form, identification as major constituent of amyloid fibrils isolated from hereditary amyloidosis patient, **156**, 762
Apolipoprotein A-IV
gene transcription, effect of triiodothyronine (rat liver), **154**, 997
Apolipoprotein B
human, homologous synthetic peptide, inhibition of lym-

phocyte proliferation (mouse), **154**, 741
Apolipoprotein B-100
secretion by intestinal Caco-2 cells: identification as major form of intestinal ApoB (human), **156**, 581
Apolipoprotein C-II
deficiency, analysis: identification of structural variant ApoC-II_{Padova} (human), **154**, 73
Apolipoprotein E
genotyping by polymerase chain reaction and allele-specific oligonucleotide probes (human blood), **157**, 1212
human, homologous synthetic peptide, inhibition of lymphocyte proliferation (mouse), **154**, 741
synthesis and secretion by injured sciatic nerves, enhancement by streptozotocin-induced diabetes (rat), **155**, 283
Apoptosis
radiation-induced, in cultured fibroblasts, inhibition by tumor promoters (mouse), **155**, 324
Arabis mosaic virus
300-ribonucleotide satellite, nucleotide sequence: implications for circularity and self-cleavage, **154**, 318
Arachidic acid
effect on activation of protein kinase C in pancreatic acinar cells (rat), **153**, 67
Arachidonate 15-lipoxygenase
from eosinophil-enriched leukocytes, partial purification and characterization (human), **150**, 376
Arachidonic acid
conversion to lipoxin A and B isomers by soybean lipoxygenase via 5,15-dihydroperoxyeicosatetraenoic acid, **153**, 840
effect on activation of protein kinase C in pancreatic acinar cells (rat), **153**, 67
endogenous, transcellular conversion to lipoxins in mixed platelet–granulocyte suspensions (human), **157**, 801
for formation of 12-hydroxyeicosatetraenoic acid mediating angiotensin II-induced adrenal aldosterone synthesis, role of diacylglycerol as source (human), **156**, 717
free, production in activated alveolar macrophages, inhibition by calmodulin antagonists (rabbit), **156**, 947
increase in bradykinin-stimulated MDCK cells, augmentation by protein kinase C, **153**, 454
induction of leukotriene C_4 formation by eosinophils in absence of other stimuli (human), **153**, 676
metabolism in
collagen-stimulated platelets, effect of 15-hydroperoxyeicosatetraenoic acid (human), **150**, 177
macrophages, modulation by 15-hydroxyeicosatrienoic acid (mouse), **153**, 799
release from phosphatidylcholine, inhibition by dexamethasone during suppression of yeast phagocytosis in murine macrophage cultures, **153**, 583
with/without tetradecanoylphorbol 13-acetate, desensitization of pituitary gonadotropes (rat), **153**, 919
uptake and distribution in HL-60 cells, effect of phorbol myristate acetate, **157**, 639
Archaerhodopsin
characterization (*Halobacterium* sp. aus-1), **151**, 1339
Arginine
effect on insulin secretion from perifused purified beta cells (rat pancreas), **151**, 948
residue Arg-33, critical role in antiviral activity of murine interferon α1 (L929 cells), **155**, 714
L-Arginine
formation of nitric oxide from and role in endothelium-dependent relaxation of vascular rings (porcine aorta), **153**, 1251
vasodilatory properties on aortic rings, analysis (rat), **154**, 332
Arginine carboxypeptidase
active subunit N-terminus and selected tryptic peptides, amino acid sequence, comparison with other carboxypeptidases (human plasma), **154**, 1323
L-Arginine ethyl ester
vasodilatory properties on aortic rings, analysis (rat), **154**, 332
Arginine vasopressin
activated platelet high-affinity GTPase, properties (human), **154**, 213
and lysine vasopressin, and mesotocin and oxytocin, identification in single neurohypophysis in marsupial (*Isodon macrourus*), **154**, 346
and phorbol esters, synergism in stimulation of insulin secretion and phosphatidylcholine metabolism in insulinoma cells (rat), **151**, 717
secretion
into hypophysial portal blood of conscious unrestrained rams, analysis, **155**, 841
from neurohypophysial nerve terminals, inhibition by calcium channel antagonist ω-conotoxin (rat), **156**, 255
Aromatase
assay, application of [19-^{14}C]androstenedione as substrate (human), **157**, 81
cDNA, cloning, immunochemical identification, and sequence analysis (human), **156**, 725
follicle-stimulating hormone-induced activity in cultured granulosa cells, effect of tumor necrosis factor (rat), **153**, 792
in immature Leydig cells, stimulation by fibroblast growth factor (pig), **151**, 163
Aromatic-L-amino-acid decarboxylase
in clonal pheochromocytoma PC12h cells, inhibition by *N*-methyl-4-phenylpyridinium ion (rat), **152**, 15
inhibition by carcinogenic heterocyclic amines (PC12h cells), **157**, 494
Aromatic rings
in peptides and proteins, electrostatic interactions between, calculation of magnitude and orientation: implications for angiotensin II, **153**, 1296
Aromatization
and 19-hydroxylation, androgens by cytochrome P450 (rat brain), **150**, 311
Arylidene-cyclopentenedione
radiosensitizers KIH-200, -201, and -202, effects on mitochondrial ATP synthesis: potent inhibition of P_i transport (rat liver), **155**, 1066
Arylphorin
concanavalin A reactivity and role of carbohydrates in up-

take by fat bodies and integument (*Musca domestica*), **151**, 1004
Arylsulfatase B, *see* *N*-Acetylgalactosamine-6-sulfatase
Ascorbate oxidase
copper stoichiometry, reassessment (zucchini), **152**, 623
Asialofetuin
sucrose-labeled, endocytosis by cultured hepatocytes, monensin effects (rat), **152**, 1275
Asialoglycoproteins
binding hepatic protein, structural similarity of macrophage lectin specific for galactose/*N*-acetylgalactosamine (rat), **155**, 720
Asolectin
bilayer membrane, ion-permeable channels, formation by enterotoxin of *Clostridium perfringens* type A, **156**, 551
L-Asparagine
induction of ornithine decarboxylase, role of membrane Na^+/H^+ antiport (rat hepatoma cells), **155**, 937
Aspartate aminotransferase
cytosolic
induction by glucagon in primary cultured hepatocytes (rat), **153**, 410
and mitochondrial, degradation in hepatic lysosomes (rat), **157**, 440
mitochondrial, nucleotide sequence and tissue distribution (human liver), **157**, 1309
reconstitution, buffer–apoenzyme interaction (porcine heart), **151**, 693
Aspartic proteinase
interactions, quantum mechanical modeling, difference in binding of diastereomeric statine models, **157**, 450
Aspergillus ochraceus
benzo[*a*]pyrene metabolism, effect of inducers, analysis by HPLC, **155**, 493
Aspirin
prevention of nonenzymatic glycosylation and carbamylation of lens crystallins *in vitro* (human eye), **151**, 991
Astrocytes
calcium influx in primary cultures, stimulation by ATP (rat), **157**, 1410
dibutyryl cAMP induction of type II 5′-deiodinase in culture (rat brain), **151**, 1164
glucose transporter activity, effects of 3,5,3′-triiodothyronine (rat brain), **156**, 275
prostaglandin D_2 release *in vitro*, stimulation by sleep-promoting substances (rat), **156**, 882
ATP (adenosine 5′-triphosphate)
–ADP exchange in hepatic mitochondria, enhancement by helium–neon laser irradiation (rat), **156**, 978
and analog ATPγS, regulation of neutrophil superoxide anion generation, calcium requirements, comparison with adenosine (human), **154**, 746
content in post-ischemic heart, determination by ^{31}P MR spectroscopy (guinea pig), **151**, 865
dependent Cl^- uptake by plasma membrane vesicles, demonstration (rat brain), **154**, 108
depletion induced by 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine, prevention by fructose (rat hepatocytes), **153**, 734
desensitization of Ca^{2+} response in Swiss 3T3 fibroblasts: single-cell studies with quantitative digital video fluorescence microscopy (mouse), **151**, 1205
differential effects on muscle phosphofructokinase activation by α-glucose 1,6-bisphosphate and fructose 2,6-bisphosphate (rat), **157**, 664
extracellular, enhancement of intracellular calcium levels in Madin-Darby canine kidney cells, **156**, 1139
hydrolysis by RecA protein, DNA sequence dependence, **157**, 127
induction of pH changes in cultured endothelial cells (bovine aorta), **152**, 1304
intraliposomal, effects on kinetics of reconstituted cytochrome-*c* oxidase from bovine heart and *Paracoccus denitrificans*, **153**, 525
maintenance of multipotent hemopoietic stem cells *in vitro* in absence of interleukin 3, mechanism, **152**, 1173
–Mg, stimulation of calcium accumulation by chromaffin granule ghosts (bovine), **155**, 656
release by platelets, effect of aggregation inhibition (human), **156**, 823
stimulation of
bacterial M13 and M13am8H1R1 procoat protein assembly into canine pancreatic microsomes, **153**, 498
calcium influx in primary astrocyte cultures (rat), **157**, 1410
$pp60^{c\text{-}src}$ kinase activity in coronary extracts (bovine), **153**, 388
(β,γ)-substituted analogs, effects on actin polymerization and thiol group reactivity, **155**, 962
synthesis
in mitochondria, effects of arylidene-cyclopentenedione radiosensitizers: potent inhibition of P_i transport (rat liver), **155**, 1066
during spore germination, role of glucose metabolism via Embden–Meyerhof pathway, analysis with mutant lacking hexokinase (*Bacillus megaterium*), **151**, 48
in 30A-5 preadipocytes, stimulation by cachectin/tumor necrosis factor, **157**, 1015
ATPase
Ca^{2+}-
calmodulin-resistant, early abnormal development in dystrophic muscle, correlation with calmodulin gene expression (chicken), **151**, 1434
in chromaffin granules, biochemical and immunological evidence (bovine), **155**, 656
detection in pancreatic acinar plasma membranes (rat), **156**, 746
guanine nucleotide- and inositol trisphosphate-induced inhibition in cardiac sarcolemmal vesicles (rat), **152**, 1111
immunocytochemical localization in platelets (human), **153**, 848
inhibition by synthetic peptides based on calmodulin-binding domain of myosin light chain kinase, **156**, 860
in microsomal plasma membranes, partial inhibition by carbachol (porcine stomach muscle), **150**, 681
sarcoplasmic reticulum-associated
binding to Gd^{3+}, analysis by NMR: detection of four

intermediate states, **155**, 236
changes in pressure-overloaded heart, prevention by sucrose feeding (rat), **156**, 917
effect of tetraphenylboron (rabbit), **151**, 1093
stimulation by 1,25-dihydroxyvitamin D_3 in aortic smooth muscle cells (rat), **150**, 1138
Ca^{2+},Mg^{2+}-, renal basolateral membrane
parathyroid hormone-induced increase, role of cAMP-dependent membrane phosphorylation (dog), **150**, 263
stimulation by platelet-derived growth factor via specific receptor (dog), **153**, 1315
detection in hepatic peroxisomes (rat), **156**, 1353
F_1-
complex with inhibitor protein, binding of dicyclohexylcarbodiimide, analysis (bovine cardiac mitochondria), **152**, 867
inhibition
by IF_1 protein, correlation to nucleotide entrapment (porcine cardiac mitochondria), **152**, 1319
and photoinactivation by dequalinium (bovine cardiac mitochondria), **152**, 968
β-subunit tryptic peptides, labeling by adjacent tightly bound 2-azido-adenine nucleotides at catalytic and noncatalytic sites (rat liver), **154**, 854
H^+,K^+-, gastric, cDNA cloning and sequence determination (pig), **157**, 203
H^+-, proton translocation, effect of 2-hydroxy-5-nitrobenzyl bromide (bovine cardiac mitochondria), **155**, 130
membrane-associated, role in transmembrane electron transport (*Cuscuta* protoplasts), **156**, 940
Mg^{2+}-, actin-activated, associated activity of smooth muscle myosin, effect of increasing myosin concentration (turkey gizzard), **154**, 928
Na^+,K^+-
alpha 3 isozyme, sensitivity to ouabain, analysis (rat brainstem), **156**, 796
chimeric α subunit (*Torpedo*/rat) expressed in *Xenopus* oocyte, ouabain sensitivity, **155**, 1237
digitalis-like endogenous ligand, tissue distribution (rat), **152**, 818
E2 conformation, endogenous ligand, characterization (human plasma), **150**, 648
inhibition by
polyene antibiotic amphotericin B (human erythrocytes), **157**, 692
protein kinase C-inhibitory anticancer ether lipids (rat brain), **157**, 1000
stimulation by 19(*S*)-hydroxyeicosatetraenoic acid (rat kidney), **152**, 1269
ATPase inhibitors
complex with F_1-ATPase, binding of dicyclohexylcarbodiimide, analysis (bovine cardiac mitochondria), **152**, 867
ATP synthase
complex in mitochondria, α-subunit precursor cDNA clones, isolation and characterization (bovine liver), **152**, 264
β and ϵ subunit genes, sequence analysis (*Bacillus megaterium*), **151**, 926
Atrial natriuretic factor
8-amino octanoic acid-substituted analogs, pharmacological profile (rat), **152**, 1070
binding and effect on cGMP formation and α-melanotropin secretion in intermediate pituitary cells (rat), **155**, 83
effects on
magnitude of duodenal spontaneous phasic contractions (rat), **155**, 1437
urinary levels of catecholamines and renin secretion (dog), **156**, 1070
free and bound forms in plasma, characterization: preferential increase of free ANP in spontaneously hypertensive and stroke-prone SH rats, **153**, 1084
gene expression and secretion by pneumocytes from neonatal lung, analysis (rat), **156**, 619
identification and characterization (frog heart), **155**, 1338
^{125}I-labeled, degradation by soluble metallopeptidase isolated from ventricular myocytes (rat), **152**, 294
immunoreactive peptides, epicardial release in inside-out perfused atria (rabbit), **153**, 811
inhibition of
mesangial cell mitogenesis *in vitro* (rat), **152**, 893
phosphate uptake by cultured opossum kidney cells, implications for renal proximal tubules, **152**, 1416
physiological concentrations, stimulation of erythroid progenitors *in vitro* (human), **156**, 15
plasma levels, comparative effects of angiotensin-converting enzyme inhibitor CS 622 and vasodilator hydralazine after chronic treatment (spontaneously hypertensive rat), **152**, 456
precursor material, detection in thymus (rat), **155**, 700
prohormone
immunoreactive N-terminal fragments plasma levels, increase by water immersion (human), **156**, 228
peptides 1–30 and 31–67, detection in blood (human), **150**, 231
release
from cultured cardiac myocytes, effect of endothelin (rat), **155**, 167
stimulation by calcitonin gene-related peptide (rat atria), **155**, 1452
secretion in noncontracting cultured atrial myocytes, inhibition by forskolin (rat), **157**, 330
sensitivity of bovine adrenal particulate guanylate cyclase, enhancement by amiloride (rat), **152**, 1263
with 29 amino acid residues, identification and characterization (chicken heart), **155**, 1330
type α, monoclonal antibody to N-terminus, preparation and application as tool for preferential detection of naturally circulating atrial natriuetic polypeptide, **151**, 1277
type β, synthesis augmentation in failing heart (human), **150**, 60
Atrial natriuretic factor receptors
absence in aldosteronoma (human), **152**, 37
analysis in brown adipose tissue (rat), **156**, 1000
coupled guanylate cyclase, characterization and regulation by protein kinase C (rat renal glomeruli), **157**, 755
in cultured cerebral neurons, photoaffinity labeling (rat), **152**, 1031

detection in chromaffin cells (bovine adrenal medulla), **150**, 781
high-affinity
in anterior pituitary, characterization (rat), **152**, 904
detection on PC12 cells (rat), **156**, 78
140-kDa, cleavage by membrane-bound acidic metallo-endopeptidase (bovine adrenal cortex), **152**, 658
placental, identification of multiple forms (human), **153**, 1
specific, characterization on cultured brain capillary endothelial cells (bovine), **157**, 308
vascular, regulation, role of protein kinase C (rat), **152**, 1097
Atriopeptin
endogenous, strategies for *in vivo* inhibition (rat), **155**, 990
type II, hydrolysis by angiotensin-converting enzyme cardiac and pulmonary isozymes, analysis (human), **151**, 109
type III, depression of sympathetic neuron excitability (guinea pig), **154**, 411
Auranofin
inhibition of macrophage-derived angiogenic activity in rat corneal bioassay (mouse), **154**, 205
Autophagic pathway
and endocytic pathway, prelysosomal convergence (rat hepatocytes), **151**, 40
Autophosphorylation
multiple-site, 150- and 170-kDa forms of epidermal growth factor receptors, comparison (human A431 cells), **153**, 183
tyrosine-specific, activity acquisition by epidermal growth factor receptor, independence from post-translational glycosylation (human A431 cells), **153**, 96
Axons
giant, nerve impulse blockade and proteinaceous target site, effects of experimental general anesthetics, comparison (squid), **154**, 47
nerve growth factor-promoted outgrowth in PC12 cells, associated decrease in poly(ADP-ribose) synthetase levels, **154**, 1034
Azacitidine
and cytosine-arabinoside, differential inhibition of mitogen-induced T-cell proliferation (rat), **151**, 548
effect on T-cell viability and proliferative response to activating agents (human blood), **151**, 1395
5-Azacytidine, *see* Azacitidine
Azadirachtin
effects on cytochrome P450-dependent ecdysone 20-monooxygenase (fly, mosquito, moth), **154**, 559
Azathioprine
inhibition of prostaglandin E_2 production, mechanism independent of cyclooxygenase inhibition (rabbit eye), **157**, 727
2-Azido-ADP
bound at catalytic and noncatalytic sites of F_1-ATPase, labeling of adjacent β-subunit tryptic peptides (rat liver), **154**, 854
2-Azido-ATP
bound at catalytic and noncatalytic sites of F_1-ATPase, labeling of adjacent β-subunit tryptic peptides (rat liver), **154**, 854
3′-Azido-3′-deoxythymidine
crystal structure: conformation and sandwiching of bases by azido groups, **152**, 351
effects on deoxynucleotide triphosphate pools of cultured muscle cells (human), **154**, 124
5′-phosphates, interaction with thymidylate synthase (*Hymenolepis diminuta*, mouse), **155**, 1418
related analog 2′,3′-dideoxythymidine, permeation of erythrocyte membrane by nonfacilitated diffusion (human), **154**, 825
3′-Azido-2′,3′-dideoxyuridine
5′-phosphates, interaction with thymidylate synthase (*Hymenolepis diminuta*, mouse), **155**, 1418
Azidothymidine
inhibition of DNA repair and mitogen-stimulated growth (human peripheral lymphocytes), **157**, 1369
2,2′-Azinobis(3-ethylbenzothiazoline-6-sulfonic acid)
hydrogen peroxide-dependent oxidation, in analysis of hydroperoxidase activity of lipoxygenase, **155**, 1075

B

Bacillus alcalophilus
polyamine metabolism, analysis, **150**, 185
Bacillus anthracis
calmodulin-dependent adenylate cyclase, relationship to *Bordetella pertussis* enzyme, **157**, 1027
Bacillus megaterium
spore germination, associated ATP production, role of glucose metabolism via Embden–Meyerhof pathway, analysis with mutant lacking hexokinase, **151**, 48
Bacillus thuringiensis
130-kDa delta-endotoxin, localization of mosquito larvicidal activity on 72-kDa N-terminal fragment, **153**, 294
Bacteria, *see also specific bacteria*
transfer into toluene–phospholipid water system: preservation of bacterial respiratory chain, **151**, 1074
Bactericidal factors
Salmonella Ra-reactive, identification of 28- and 70-kDa polypeptide components responsible for bactericidal activity (mouse), **152**, 636
Bacteriophages
M13, electric field effects, detection by electro-optical measurements, **151**, 768
T3, tail fibers, thin rod segment, three-stranded α-helical coiled coil as proposed model, **150**, 1244
Bacteriorhodopsin
photocycle, associated light-induced conformational changes in lysine (*Halobacterium halobium*), **156**, 86
Bay K 8644
and endothelin, vasoconstrictive properties in isolated aorta, comparison (rat), **156**, 186
and nifedipine, effects on contraction of isolated skeletal muscle fibers, comparison (*Rana esculenta*), **152**, 1002
B-cell stimulatory factor
–interleukin 6, IgM synthesis-stimulatory activity, production by endothelial cells (human), **153**, 1045; *er-*

ratum, **157**, 850
Benzene
oxidation by cytochrome P450-enriched *Streptomyces griseus* extracts, **157**, 1417
Benzidine
hydrogen peroxide-dependent oxidation, in analysis of hydroperoxidase activity of lipoxygenase, **155**, 1075
Benzocaine, *see* Ethyl aminobenzoate
Benzodiazepine
and γ-aminobutyric acid, receptor protein major peptide subunits, identification of binding sites for both ligands (bovine, human, rat brain), **153**, 1006
-like molecules, detection in bovine brain and milk, **152**, 534
natural molecules, increase in wheat and potato during germination, **157**, 1436
Benzolactams
calcium channel-blocking, targets in skeletal muscle and functions in excitation–contraction coupling (mouse), **156**, 1324
Benzo[*a*]pyrene
metabolism
by dioxygenase enzyme system (*Selenastrum capricornutum*), **152**, 540
effects of inducers *in vivo* and *in vitro*, HPLC analysis (*Aspergillus ochraceus*), **155**, 493
*N*α-Benzoyl-L-arginine
vasodilatory properties on aortic rings, analysis (rat), **154**, 332
*N*α-Benzoyl-L-arginine ethyl ester
hydrolysis by insulin receptor incubated with trypsin (rat liver), **156**, 30
vasodilatory properties on aortic rings, analysis (rat), **154**, 332
*N*α-Benzoyl-DL-arginine-*p*-nitroanilide
hydrolysis by insulin receptor incubated with trypsin (rat liver), **156**, 30
S-Benzyl-L-cysteine-*p*-nitroanilide
hydrolyzing enzyme, inhibition by L-leucine and analog (*Escherichia coli*), **153**, 767
2-Benzyl-4-oxo-5,5,5-trifluoropentanoic acid
–carboxypeptidase A complex, ^{19}F NMR spectroscopy, **153**, 773
Bezafibrate
inhibition of fatty acid oxidation (rat liver), **157**, 1148
Bezafibroyl CoA
inhibition of fatty acid oxidation (rat liver), **157**, 1148
Bicarbonate
transport activities in sperm, decrease during epididymal maturation (pig), **157**, 1280
Bile acids
from patients with renal failure, analysis: possible bile acid secretion in distal tubule, **152**, 197
synthesis
in cultured hepatocytes, feedback inhibition (pig), **155**, 850
regulation: isolation and characterization of microsomal phosphatases (rat liver), **155**, 7
Bilirubin
specific glucuronosyltransferase, microsomal activator, isolation from hepatic microsomes (normal, jaundiced Gunn rats), **154**, 1212
Biopterin
total, nerve growth factor-induced transient increase (rat PC12h cells), **153**, 382
Biphenyl, *see* Diphenyl
2,6-Bis(*N*-3-aminopropylmethanamine)-1-methoxy-4-methylbenzene
DNA-binding properties, analysis, **152**, 1441
2′,7′-Bis(carboxyethyl)-5(6)-carboxyfluorescein
application in determination of intracellular pH (*Halobacterium halobium*), **155**, 123
Bisethylxanthogen, *see* Dixanthogen
Bis(4-*N*-methylpyridyl)diphenylporphine
cis and *trans* isomers, self-assembly on nucleic acid templates (bovine thymus), **157**, 350
2,3-Bisphosphoglycerate
inhibition of hemoglobin synthesis and phosphorylation of initiation factor 2 by casein kinase II in reticulocyte lysates (rabbit), **157**, 134
2,3-Bisphosphoglycerate mutase
cDNA cloning and sequencing (mouse), **156**, 874
stimulated phosphatase, and synthase activities, comparative effects of sulfhydryl reagents (human erythrocytes), **153**, 945
Bis(sulfosuccinimidyl)suberate
crosslinking pattern of band 3 protein, modification by partial covalent labeling of band 3 protein lysines with pyridoxal 5′-phosphate (human erythrocytes), **156**, 1215
Bleomycin
and amsacrine, related synthetic compound, DNA-binding and -cleaving properties, **152**, 695
Blood, *see also* Plasma; Serum
glutaraldehyde-crosslinked erythrocytes as substitute, evaluation (human), **156**, 970
hypophysial portal, secretion of arginine-vasopressin and corticotropin-releasing factor into, analysis in conscious unrestrained rams, **155**, 841
normal and Paget's disease, analysis for nerve growth factor (human), **155**, 482
peripheral, detection of prohormone atrial natriuretic peptides 1–30 and 31–67 (human), **150**, 231
BM 41.440, *see* 1-*S*-Hexadecyl-2-methoxymethyl-*rac*-glycero-3-phosphocholine
Bombesin
analog [Leu^{13}-ψ(CH$_2$NH)Leu^{14}]bombesin, activity as specific bombesin receptor antagonist in Swiss 3T3 cells, characterization, **155**, 359
and platelet-derived growth factor, induction of phospholipase C-mediated hydrolysis of phosphoinositides, differential sensitivity to phorbol esters and pertussis toxin (murine NIH 3T3 cells), **152**, 285
stimulation of
inositol phosphate production in GH$_4$C$_1$ pituitary tumor cells, comparison with thyrotropin-releasing hormone, **154**, 654
protein kinase C and DNA synthesis, potentiation by diacylglycerol kinase inhibitor R 59022 (murine Swiss 3T3 cells), **155**, 561

Bombesin receptors
antagonists
inhibition of autocrine signals in NCI-H345 small cell lung carcinoma cells, **156**, 1383
[Leu^{14}-Ψ-CH_2NH-Leu^{13}]bombesin, partial agonist activity in peptic cells (frog), **157**, 1154
Bone
inductive protein osteogenin, dissociative extraction from tooth matrix and partial purification by heparin affinity chromatography (rat), **157**, 1253
proteins synthesized in cells, identification by antibody screening of cDNA expression library (rat), **151**, 382
Bone marrow
DNA synthesis, augmentation by platelet-activating factor (guinea pig), **157**, 563
progenitor cells, infection with retroviral vectors prepared with amphotropic or xenotropic envelope, comparison (human), **151**, 201
Bordetella pertussis
calmodulin-dependent adenylate cyclase, relationship to *Bacillus anthracis* enzyme, **157**, 1027
Botulinum C2 toxin
and other toxins, types of ADP-ribose protein bonds formed, comparison (human platelets), **156**, 361
Botulinum D toxin
ADP-ribosylation of 22–24-kDa membrane protein distinct from p21$^{N\text{-}ras}$ (HL-60 cells, human platelets), **155**, 263
effect on neutrophils (rabbit), **152**, 926
Bradykinin
desensitization of Ca^{2+} response in Swiss 3T3 fibroblasts: single-cell studies with quantitative digital video fluorescence microscopy (mouse), **151**, 1205
effect on inositol 1,4,5-trisphosphate formation in fibroblasts from progressive systemic sclerosis patients, **156**, 1077
induction of
diacylglycerol and lysophosphatidyl inositol production in dorsal root ganglion × neurotumor hybrid cells, **152**, 724
generation of inositol 1,4,5-trisphosphate, effects of pertussis toxin, extracellular Ca^{2+}, and protein kinase C down-regulation (NG108-15, NIH 3T3 cells), **157**, 1429
stimulated MDCK cells, protein kinase C modulation of phospholipase C and augmentation of arachidonic acid release, **153**, 454
stimulation of phosphodiesteratic cleavage of phosphatidylcholine in cultured endothelial cells (bovine), **157**, 1271
Brain
amyloid protein precursor
detection of three types of mRNA: differential expression in Alzheimer's disease patients, **157**, 472
and senile plaques in Alzheimer's patients, detection by antisera to N-terminal peptide, **156**, 432
angiotensin II-binding proteins, biochemical and immunological properties, comparison with other tissues (rabbit), **156**, 1230
caudate-putamen
c-*fos* expression, activation by morphine (rat), **157**, 698
and hippocampus, potassium-induced cholecystokinin release from incubated slices, stimulation by phorbol esters (rat), **153**, 372
cerebellum, identification of specific binding proteins for calcitonin gene-related peptides I and II (human), **151**, 1081
cortex
agonist-induced inositol phosphate formation, inhibition by fluoride (rat), **155**, 664
cholecystokinin C-terminal octapeptide receptors, discrimination between guinea pig and rat forms by cyclic analogs, **154**, 1301
and hippocampus, electroconvulsive shock-induced inositol trisphosphate accumulation, inhibition by carbamazepine (rat), **153**, 128
inositol 1,4,5-trisphosphate mass measurements in slices, effects of neurotransmitters and depolarization (rat), **157**, 684
detection of
benzodiazepine-like molecules (bovine), **152**, 534
Ca^{2+}/calmodulin-sensitive inositol 1,4,5-trisphosphate 3-kinase (bovine, rat), **153**, 632
specific binding sites for platelet-activating factor (gerbil), **151**, 730
water-soluble endogenous diacylglycerol kinase regulator, **151**, 1088
developing, hexokinase activity, relationship to insulin effect on [^{14}C]valine incorporation (rat), **154**, 450
extracts from Alzheimer's patients, stimulation of survival of rat cerebral cortical neurons, **150**, 1263
glucose uptake *in vivo*, measurement by ^{31}P NMR (rat), **157**, 1258
hepoxilin A3 formation and metabolism, analysis (rat), **151**, 493
[^{3}H]propionyl-neuropeptide specific binding, comparison with binding in rabbit aortic membranes (rat), **151**, 1213
hypothalamus, *see* Hypothalamus
identification of
high-affinity interleukin 1β receptors (rat), **156**, 61
pp60$^{c\text{-}src}$-phosphorylating and -inhibiting protein-tyrosine kinase (neonatal rat), **154**, 796
liposome targeting with mannose as recognition marker (mouse), **153**, 1038
1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine metabolism, *in vivo* analysis (rat), **152**, 1339
multifunctional protein kinase Ca^{2+}/CaM-dependent isoenzymes (rabbit, rat), **151**, 1332
peptide YY receptors, detection (dog, pig), **150**, 25
prosomatostatin processing, comparison with gut and pancreas (anglerfish), **151**, 347
purification of basic fibroblast growth factor receptors (rat), **155**, 583
sarafotoxin-b receptors, localization and characterization (rat), **157**, 1104
and spinal cord, regional distribution of immunoreactive brain natriuretic peptide (pig), **155**, 733
synaptic plasma membrane vesicles, detection of distinct sites coupled to high-affinity ω-conotoxin receptors

(rat), **154**, 298
Brain natriuretic peptide
high-molecular-weight, isolation and identification in cardiac atrium (pig), **157**, 402
precursor, cDNA cloning and sequence analysis (pig), **157**, 410
regional immunoreactivity in brain and spinal cord (pig), **155**, 733
32-residue, isolation and structural determination (pig), **155**, 726
12-kDa, detection in heart (pig), **155**, 740
Breast
cancerous and normal, endogenous mediators of estradiol binding, comparison (human), **150**, 1131
BRL 34915, *see* Cromakalim
BRL 37344
β-adrenergic-agonistic, binding affinities and action in brown adipose tissue, discrepancies (rat), **156**, 375
Bromoacetate
modification of angiogenin at pH 5.5, identification of modification sites (human), **156**, 530
1-Bromobutane, *see n*-Butyl bromide
2-Bromohydroquinone
–glutathione conjugates, isomeric, differential uptake into kidney slices (rat), **152**, 223
1-Bromopentane, *see n*-Amyl bromide
Buffers
for reconstitution of aspartate aminotransferase, interaction with apoenzyme (porcine heart), **151**, 693
Bunazosinhydrochloride
effect on cytosolic Ca^{2+} levels in aortic smooth muscle cells (rat), **150**, 1282
α-Bungarotoxin
isolation of antigenically reactive peptide fragments and localization of antigenic regions (*Bungarus multicinctus*), **155**, 870
Buthionine sulfoximine
effect on renal nuclear glutathione status (rat), **155**, 956
n-Butyl bromide
and other general anesthetics, effects on nerve impulse blockade and on proteinaceous target site, comparison (squid giant axon), **154**, 47
n-Butyl hydroperoxide
reaction with vitamin E radical, kinetic analysis, **155**, 1046
sec-Butyl hydroperoxide
reaction with vitamin E radical, kinetic analysis, **155**, 1046
tert-Butyl hydroperoxide
induction of cystine transport in erythrocytes (human), **155**, 160
reaction with vitamin E radical, kinetic analysis, **155**, 1046
n-Butyrate
induction of c-*erb* A oncogene expression in fibroblasts (human colon), **150**, 259
BW 755C
soybean lipoxygenase-catalyzed oxidation by linoleic acid hydroperoxide, **151**, 339

C

Cachectin, *see* Tumor necrosis factor
Cadmium
binding peptides, synthesis-defective *Schizosaccharomyces pombe* mutants, isolation and characterization, **151**, 32
inhibition of *N*-methyl-*N*-nitrosourea induction of adaptive response (*Escherichia coli*), **157**, 1124
Cadystin
synthesis-defective *Schizosaccharomyces pombe* mutants, isolation and characterization, **151**, 32
Caffeine
in analysis of role of inositol phospholipid hydrolysis in opening of voltage-operated Ca^{2+} channels (guinea pig ileum), **153**, 14
induced aortic smooth muscle contraction, time- and use-dependent inhibition by ryanodine (guinea pig), **154**, 219
interaction with calcium-release channels of heavy sarcoplasmic reticulum, role of 170-kDa calcium-binding protein (rabbit skeletal muscle), **154**, 462
Calcimedin
and calelectrins, correlation of relatedness, **156**, 193
Calcitonin
biologically active analogs with minimal interactions with phospholipids, demonstration (salmon), **152**, 203
Calcitonin gene-related peptide
inhibition of mitogen-stimulated T-cell proliferation (mouse), **154**, 227
positive inotropic effects and binding characteristics in ventricular muscles (porcine heart), **155**, 289
stimulation of atrial natriuretic peptide release (rat), **155**, 1452
Calcitonin gene-related peptide receptors
in cultured rat smooth muscle and bovine endothelial cells, identification and characterization, **151**, 1113
identification in cerebellum (human), **151**, 1081
plasma membrane-associated, identification and characterization (rat liver), **152**, 383
Calcium
accumulation by chromaffin granule ghosts, stimulation by magnesium ATP (bovine), **155**, 656
binding by amphomycin, conformational changes, circular dichroism and monolayer study, **150**, 384
binding proteins, interactions with adriamycin, analysis with Tb^{3+} (GH3/B6 pituitary tumor cells), **151**, 679
and calmodulin
induced activation of myosin light-chain kinase, inhibition by thyroid hormones (chicken, rabbit), **152**, 270
role in phosphorylation of phospho*enol*pyruvate carboxylase (*Sorghum vulgare* leaf), **155**, 835
cytoplasmic free
in aortic smooth muscle cells, effect of bunazosinhydrochloride (rat), **150**, 1282
concentration in cultured aortic endothelial cells, effects of superoxide and lipid peroxide (pig), **152**, 301
dual effect of glucose in β-cells (murine pancreas), **150**, 419
increase
bombesin-induced, in small cell lung carcinoma cells, inhibition by bombesin receptor antagonist, **156**, 1383
induction by epidermal growth factor in cultured thyroid cells (pig), **151**, 530

mitogen-induced, effect of anti-HLA class I monoclonal antibodies inhibiting cell proliferation (human lymphocytes), **154**, 712
platelet-derived growth factor-stimulated, inhibition by interferon (murine fibroblasts), **150**, 1207; *erratum*, **151**, 1461
stimulation by peptides from interleukin-1-treated synovial cell cultures (human neutrophils), **155**, 1154
transient, induction by platelet-activating factor in cultured vascular endothelial cells (human), **154**, 910
and insulin release, dual effect of glucose, relationship to beta cell fuel deprivation (mouse), **153**, 984
and luteinizing hormone responses, biphasic activation by gonadotropin-releasing hormone *in vitro* (rat pituitary), **154**, 398
oscillations in pancreatic beta cells, induction by glucose (mouse), **151**, 1299
and protein kinase C, in whole pancreatic islets, synergistic regulation of hydrogen peroxide generation (rat), **155**, 569
spatial distribution and temporal changes in platelets (human), **156**, 1152
dependent electrophoretic shift, demonstration in galactosyltransferase modifier protein α-lactalbumin (bovine), **157**, 944
dependent $NAD(P)^+$-induced alterations of mitochondrial membrane permeability, analysis (rat hepatoma, liver), **154**, 934
extracellular, effect on bradykinin-induced generation of inositol 1,4,5-trisphosphate (NG108-15, NIH 3T3 cells), **157**, 1429
fluxes
cytosolic concentration, and membrane transport in cardiac myocytes, β-adrenergic regulation, role of polyamines as intracellular messengers (rat), **153**, 1179
in pituitary tumor cell line 235-1, dihydropyridine inhibition, prevention by pertussis toxin pretreatment (rat), **151**, 361
in 235-1 clonal pituitary cells, effect of interleukin 1β, **155**, 1097
gating system, coupling to type II insulin-like growth factor receptors (murine fibroblasts), **154**, 9
histamine-stimulated uptake in synaptosomes, mechanism: activation of calcium channels (rat brain), **153**, 1136
induction of
conformational change in actin: structural relationship between antigenic epitopes and cation exchange (rabbit, scallop), **152**, 368
fast disassembly of microtubules (bovine brain), **155**, 1464
inositol 1,4,5-trisphosphate-dependent and -independent release induced by guanine nucleotide in vascular smooth muscle, heparin effects (rabbit), **153**, 625
intracellular
dopaminergic reduction: role of calcium influx (rat anterior pituitary), **151**, 913
free, elevation in platelets of Dahl-sensitive rats fed high-salt diet, analysis with Fura-2, **154**, 380
levels in
fura-2-loaded smooth muscle cells, effects of carbachol and KCl (*Mytilus edulis*), **153**, 683
GH_3 pituitary tumor cells, effect of fetal calf serum, **156**, 1411
Madin-Darby canine kidney cells, enhancement by extracellular ATP and UTP, **156**, 1139
platelet-activating factor-stimulated increase, deactivation by formyl-methionyl-leucyl-phenylalanine: role of protein kinase C (rabbit neutrophils), **151**, 836
stores in smooth muscle, functional removal by ryanodine treatment (guinea pig), **152**, 417
mediated hemagglutination by serum amyloid P component, inhibition by glycosaminoglycans (human), **150**, 212
mobilization
by angiotensin II, role in induction of c-*fos* gene expression in cultured vascular smooth muscle cells (rat), **150**, 52
in cultured rat vascular smooth muscle cells, associated plasma factor, isolation and characterization (human), **153**, 1068
by DL-*myo*-inositol 1,4,5-trisphosphorothioate (Swiss 3T3 cells, *Xenopus* oocytes), **150**, 626
in neutrophils activated by serum-opsonized and nonopsonized particulate stimuli, relationship to inositol trisphosphate generation (human), **150**, 532
relationship to G_i dissociation during platelet phospholipase A_2 activation (human), **153**, 21
movement in activated platelets, organization, effect of ligands for fibrinogen receptor GPIIb-IIIa complex (human), **154**, 258
muscarinic receptor-induced release and uptake in salivary duct cells, differential inhibition by protein kinase C (human), **152**, 1062
myofilament sensitivity to, in α-toxin-permeabilized arterial smooth muscle, augmentation by norepinephrine and GTP-γ-S (rabbit), **157**, 677
–protein kinase C systems, amylase secretory process subsequent to, inhibition by cholecystokinin (rat pancreatic acini), **154**, 1314
regulation of vascular smooth muscle thin filaments, role of caldesmon (sheep), **155**, 197
release
through cardiac calcium channels reconstituted into liposomes, measurement with fura-2 (bovine), **154**, 1067
from hepatic microsomes, effect of anion transport inhibitor 4,4′-diisothiocyanostilbene-2,2′-disulfonic acid (rat), **151**, 396
from hepatic mitochondria, inhibition by halogenated anesthetics (rat), **155**, 978
from intracellular stores in aortic vascular smooth muscle cells *in vitro*, induction by endothelin (rat), **156**, 312
in myocardial cells, refractoriness, role in desensitization to norepinephrine (rat), **151**, 333
by neutrophils, correlation with discharge of specific granule contents (human), **154**, 1308
from platelet plasma membrane vesicles, induction by inositol 1,4,5-trisphosphate, **150**, 1021

rapid, in isolated skeletal and cardiac sarcoplasmic membranes, effects of blockers (dog, rabbit), **154**, 1
requirement for ATP, ATPγS, and adenosine regulation of neutrophil superoxide anion generation, comparison (human), **154**, 746
role in
phorbol ester potentiation of KCl-induced vasocontraction (rat aorta), **156**, 1195
stabilization of hyalin structure (*Strongylocentrotus droebachiensis*), **152**, 830
sensitivity of NAD^+-isocitrate dehydrogenase and 2-oxoglutarate dehydrogenase in mitochondria, comparison (rat liver, hepatoma cells), **157**, 1218
stabilized prothrombin conformer, detection of hydrophobic site (human), **157**, 295
uptake
by cultured aortic smooth muscle cells, stimulation by 1,25-dihydroxyvitamin D_3 (rat), **152**, 1388
by gastric chief cells, role in F^--stimulated pepsinogen release (guinea pig), **152**, 161
in liver, hormonally induced, inhibition by exposure to depolarizing concentrations of K^+ (rat), **153**, 1282
Na^+-dependent, in sarcolemmal vesicles, stimulation by concanavalin A (rat heart), **154**, 245
in native cardiac microsomes, correlation with ratio of unphosphorylated to phosphorylated phospholamban as determined by Western blotting (dog), **157**, 1296
in primary astrocyte cultures, stimulation by ATP (rat), **157**, 1410
synaptosomal, activation by sodium fluoride (rat brain), **151**, 774
Calcium channels
activation, role in histamine-stimulated Ca^{2+} uptake in synaptosomes (rat brain), **153**, 1136
activity in isolated skeletal muscle fibers, effects of Bay k 8644 and nifedipine, comparison (*Rana esculenta*), **152**, 1002
antagonist ω-conotoxin, inhibition of peptidergic nerve terminal secretion (rat), **156**, 255
associated receptor, binding of [^{3}H]nimodipine, inhibition by kappa agonist U50-488H (rat brain), **149**, 1042; *errata*, **151**, 630; **152**, 948
binding of ω-conotoxin, structural properties (chicken, rabbit, rat), **150**, 1051
blockers, targets in skeletal muscle and functions in excitation–contraction coupling (mouse), **156**, 1324
from cardiac muscle, reconstitution in planar bilayers (dog), **152**, 308
cardiac, reconstituted into liposomes, calcium efflux, measurement with fura-2 (bovine), **154**, 1067
dihydropyridine receptor coupling, evidence for: voltage dependence of nitrendipine inhibition of catecholamine release in intact adrenals (cat), **153**, 912
heavy sarcoplasmic reticulum, interaction with caffeine, role of 170-kDa calcium-binding protein (rabbit skeletal muscle), **154**, 462
independence of chloroquine resistance reversal in malaria (human), **155**, 476
modulators, effect on aortic endothelial cells *in vitro* (bovine), **154**, 591
N-type, voltage-dependent, role in coupling of high-affinity ω-conotoxin receptors to distinct sites in brain synaptic plasma membrane vesicles (rat), **154**, 298
ryanodine receptor complex with, isolation from cardiac sarcoplasmic reticulum (dog), **151**, 441
sarcolemmal, partially purified, incorporation into planar lipid bilayers (bovine heart), **152**, 1255
skeletal muscle, structural analysis by photoaffinity labeling and limited proteolysis (rabbit), **154**, 455
smooth muscle, blockage by PN 200-110, comparison with binding affinities (equine portal vein), **152**, 1165
voltage-gated, activation by interferon γ (RPMI 4788 cells), **153**, 1276
voltage-operated, opening, role of inositol phospholipid hydrolysis, analysis with F^- and caffeine (guinea pig ileum), **153**, 14
Caldesmon
15-kDa actin-binding region, identification by chemical crosslinking (chicken, turkey gizzard), **154**, 564
photocrosslinking to calmodulin and/or actin (chicken gizzard), **156**, 1033
role in calcium regulation of vascular smooth muscle thin filaments (sheep), **155**, 197
35-kDa fraction from gizzard smooth muscle, induction of F-actin bundles (chicken), **155**, 808
Calelectrin
and calcimedin, correlation of relatedness, **156**, 193
Calmodulin
and/or actin, photocrosslinking to chicken gizzard caldesmon, **156**, 1033
binding domain of Ca^{2+}/calmodulin-dependent protein kinase II from brain, mapping (rat), **152**, 122
and Ca^{2+}
induced activation of myosin light-chain kinase, inhibition by thyroid hormones (chicken, rabbit), **152**, 270
role in phosphorylation of phospho*enol*pyruvate carboxylase (*Sorghum vulgare* leaf), **155**, 835
gene expression, early abnormal development in dystrophic muscle, correlation with reduced activity of resistant Ca^{2+}-ATPase (chicken), **151**, 1434
nuclear, concentration and distribution during proliferative activation of hepatocytes, analysis (rat), **150**, 1162
phosphorylation at threonine residues by adrenal cortex cytosol (guinea pig), **156**, 1333
role in stimulation of leucine transport by concanavalin A (human lymphocytes), **153**, 570
stimulated protein methylation in hepatic cytosol *in vitro*, identification of glutathione *S*-transferase as substrate and glutathione as inhibitor (rat), **156**, 368
Calorimetry
quick-freeze differential scanning, in assessment of phase transitions in microsomal membranes (tomato), **153**, 104
Calpain
cell-penetrating inhibitor, synthesis (human, pig), **153**, 1201
role in selective increased phosphorylation of anion-transport protein in erythrocytes from hypertensive patients, **151**, 590
synthetic inhibitor, inhibition of membrane protein pro-

teolysis (rat erythrocytes), **157**, 1117
Calpastatin
binding to membranes, mechanism (bovine heart), **150**, 170
defect in erythrocytes from essential hypertension patients, characterization, **157**, 867
Calpeptin
synthesis: cell-penetrating calpain inhibitor (human), **153**, 1201
Candida albicans
fungicidal effects of myeloperoxidase, role of enzyme binding to mannan, **154**, 809
Candida maltosa
grown on hexadecane, cytochrome P450 mRNA synthesis, indirect induction by oxygen limitation, **150**, 859
Capillaries
myocardial, detection of endothelial insulin-like growth factor receptors: potential regulation of IGF-I transport to cardiac muscle (rat), **152**, 93
Carbachol
elevation of 1,4,5-trisphosphate levels in cerebral cortex slices: mass measurements by radioreceptor assay (rat), **157**, 684
induced inositol phosphate formation in cerebral cortex, inhibition by fluoride (rat), **155**, 664
partial inhibition of plasma membrane Ca^{2+} pump in microsomes (porcine stomach muscle), **150**, 681
and potassium chloride, effects on intracellular free Ca^{2+} levels in fura-2-loaded smooth muscle cells (*Mytilus edulis*), **153**, 683
Carbamazepine
inhibition of electroconvulsive shock-induced inositol trisphosphate accumulation in cerebral cortex and hippocampus (rat), **153**, 128
Carbamoyl-phosphate synthase
and glutamine amidotransferase, associated domains of mammalian CAD protein, identification of intervening junction, **154**, 1047
hepatic mitochondrial, effects of sodium benzoate (rat), **151**, 872
Carbamylation
nonenzymatic, lens crystallins, prevention by aspirin (human eye), **151**, 991
Carbodiimides
water-soluble, inactivation of thrombin: characterization of essential carboxyl group (bovine), **151**, 709
Carbohydrates
from activator protein for glucosylceramide β-glucosidase, analysis (guinea pig liver), **154**, 1197
arylphorin, role in uptake by fat bodies and integument (*Musca domestica*), **151**, 1004
Carbon
fixation, photoreductive: role of light and dark transients of glycerate-3-phosphate, **150**, 399
Carbon dioxide
ribulose 1,5-bisphosphate-dependent fixation in halophilic archaebacterium, analysis (*Halobacterium mediterranei*), **156**, 451
Carbonic anhydrase III
identification as potential senescence biomarker (rat), **154**, 1130
Carbon-phosphorus lyase
detection in cell-free extracts of *Enterobacter aerogenes*, **157**, 190
Carbon tetrachloride
inhibition of protein kinase C (rat hepatocytes), **153**, 591
metabolism by cytochrome P450, effect of oxygen: comparison between isozymes (rat), **152**, 1463
Carbovir, *see* 2′,3′-Didehydro-2′,3′-dideoxyguanosine
Carboxyethyl γ-aminobutyric acid
effect on establishment and growth of Epstein–Barr virus-transformed lymphocytes (human), **150**, 931
γ-Carboxyglutamic acid
-containing peptides derived from factor IX and factor X, inhibition of prothrombin activation (human), **152**, 1207
Carboxylesterase
cDNA cloning and sequencing: evidence for multigene family (rat liver), **156**, 866
Carboxyl ester lipase
pancreatic, purification and N-terminal amino acid sequence (human), **155**, 950
Carboxyl groups
essential thrombin, characterization: role in thrombin inactivation by water-soluble carbodiimides (bovine), **151**, 709
Carboxypeptidase A
–2-benzyl-4-oxo-5,5,5-trifluoropentanoic acid complex, ^{19}F NMR spectroscopy, **153**, 773
Carboxypeptidase N, *see* Arginine carboxypeptidase
Carboxypeptidases
bovine and human, amino acid sequences of N-terminal tryptic peptides, comparison with human plasma carboxypeptidase N active subunit, **154**, 1323
Carcinoembryonic antigen
cell membrane and circulating, linkage to phosphatidylinositol-containing hydrophobic domain, analysis (HT-29 cells), **155**, 794
related proteins, and pregnancy-specific β_1-glycoprotein, encoding genes, relationship (human), **154**, 130
sequence homology with pregnancy-specific β_1-glycoprotein (human), **152**, 762
Carcinogenesis
cutaneous, inductive capacity of 7,12-dimethylbenz[*a*]anthracene, augmentation by impairment of immunological surveillance (C3H mouse), **151**, 148
hepatic, associated hepatocyte nodules, decreased expression of cytochrome P452 (rat), **152**, 921
Cardiolipin
antibodies, separation from lupus anticoagulant on phospholipid-coated polystyrene column (human), **155**, 1001
Cardiomyopathy
associated increase in ventricular preproenkephalin A mRNA levels, analysis (hamster), **155**, 449
cardiac protein kinase C activity increase during disease progression (hamster), **157**, 507
Cardiotoxins
toxic site localization: *in vivo* lethality expressed by small

synthetic peptides modeled after first loop (*Naja mossambica*), **153**, 642
Carnitine palmitoyltransferase I
inhibition by ethanol in short-term incubated hepatocytes (rat), **154**, 682
short-term regulation in isolated hepatocytes, assay procedure (rat), **151**, 781
stimulation by dietary lovastatin (rat liver), **150**, 1077
Cartilage
articular
experimental osteoarthritic, enrichment in guanidine-soluble type VI collagen, demonstration (dog), **157**, 250
identification of thrombospondin (sheep), **153**, 708
proteoglycan synthesis *in vitro*, inhibition by interleukin 1 (pig), **154**, 421
repair *in vivo*, promotion by basic fibroblast growth factor (rabbit), **156**, 611
Casein
phosphorylation by polypeptide-dependent protein kinase *in vitro*, inhibition by glycyrrhizin (HeLa S3 cells), **157**, 597
αs1-Casein
antibody responses analyzed with proteolytic and synthetic peptides, strain comparisons (mouse), **154**, 876
Casein kinase I
phosphorylation of glycogen synthase, effect of spermine (rabbit muscle), **156**, 653
Casein kinase II
murine nucleolin as physiological substrate, identification and characterization (porcine spleen), **156**, 1390
phosphorylation
of initiation factor 2 in reticulocyte lysates, inhibition by 2,3-bisphosphoglycerate (rabbit), **157**, 134
of protein B-50 (rat brain), **155**, 1207
specific, of β subunit of eukaryotic initiation factor 2 (bovine brain), **153**, 313
β-Casomorphin-5
conformational analysis by NMR spectroscopy, **152**, 512
Catalase
gene expression, analysis in acatalasia fibroblasts (human), **153**, 59
HPI and HPII, compartmentalization in *Escherichia coli*, **154**, 392
Cataractogenesis
associated covalent change in α-crystallin (human lens), **150**, 987
Catecholamines
release in intact adrenals, voltage-dependent inhibition by nitrendipine: evidence for dihydropyridine receptor coupling to calcium channels (cat), **153**, 912
Catharanthine
effect on multidrug resistance and labeling of P-glycoprotein by vinblastine photoaffinity analog (human leukemic cells), **153**, 959
Cathepsin A
isoenzymes, conversion of angiotensin I to angiotensin II (porcine kidney), **154**, 1122
Cathepsin B
inhibition by peptidyl *O*-acyl hydroxamates, analysis (bovine spleen), **155**, 1201
Cathepsin C
activation of neuraminidase in β-galactosidase–neuraminidase–protective protein complex *in vitro* (human placenta), **157**, 770
Cathepsin D
from granulomatous tissue, release of T-kinin-Leu from T-kininogen (rat), **150**, 1199
inactivation of cystatins (human), **154**, 765
Cathepsin H
effect on cystatins (human), **154**, 765
Cathepsin L
effect on cystatins (human), **154**, 765
induced degradation of epidermal growth factor receptors, inhibition by c-Ha-*ras* gene products (human A431 cells), **151**, 78
in spermatozoa, identification and conditions for unmasking (guinea pig), **151**, 827
Cell adhesion
CD11b/CD18-dependent, activation by hydrogen peroxide (U-937 cells), **157**, 443
Cell cultures
hepatocytes
ligand-dependent maintenance of ethanol-inducible cytochrome P450 (rat), **150**, 436
primary monolayer, hydroxylation, conjugation, and sulfation of bile acids (rat), **154**, 1114
hepatoma H35 cells, insulin binding kinetics: disappearance of negative cooperativity in cells with short incubation (rat), **157**, 1390
lymphocytes, support by feeder cells, mechanism, **150**, 1037
Plasmodium falciparum, secretion of virus-like particles containing knob-associated histidine-rich proteins into medium, **151**, 749
serum-free, osteoblast-like cells, growth hormone-dependent stimulation via local synthesis of insulin-like growth factor I (rat), **151**, 142
synovial, interleukin-1-treated, peptides from, stimulation of neutrophil cytosolic free calcium levels and locomotion (human), **155**, 1154
thyroid cells in suspension, maintenance by dimethyl sulfoxide: facilitation of hormone synthesis and release (human), **155**, 100
Cell cycle
effect on transformation competence, specification (*Dictyostelium discoideum*), **154**, 54
G_2 phase, associated storage of histone H4 mRNA as small cytoplasmic ribonucleoprotein (*Physarum polycephalum*), **153**, 162
proliferation renewal, role of c-*fos* mRNA accumulation level (murine myoblasts), **153**, 1090
Cell lines, *see also* Tumor cells
CHO (Chinese hamster ovary), *see* CHO cells
F-11 (dorsal root ganglion × neurotumor hybrid), production of diacylglycerol and lysophosphatidyl inositol, induction by bradykinin, **152**, 724
MEL, expression of human Gγ-globin genes with T or C at position 158, **155**, 1213
myeloid FDC-P1, tyrosine kinase, stimulation by inter-

leukin 3 (mouse), **154**, 991
REF52, phosphatidylcholine hydrolysis and diacylglycerol accumulation, stimulation by vasopressin (rat embryo), **152**, 565
WISH, sensitive to interferon γ antiproliferative effect, transferrin receptor expression, reduction by IFN γ (human), **153**, 897
Cellobiohydrolase II
domain structure, analysis by small-angle X-ray scattering: close resemblance to cellobiohydrolase I (*Trichoderma reesei*), **156**, 180
Cellulose
–DNA, binding of IM-9 lymphoblastoid cell glucocorticoid receptor, effect of heat shock protein HSP90 (human), **151**, 1226
Cephalexin
uptake in intestinal cells, identification of transport carrier (human HT-29 cells), **155**, 1082
Chediak-Higashi syndrome
protein kinase C down-regulation by phorbol ester (beige mouse), **153**, 648
Chemiluminescence
luminol-dependent, stimulation by phorbol ester and ionophore A23187, role of degranulation and myeloperoxidase (human neutrophils), **155**, 106
luminol-enhanced, in specificity and efficiency assessment of oxygen radical scavengers, **150**, 39
Chemotaxis
bacterial, sensory transduction, role of phosphotransfer between proteins CheA and CheY (*Salmonella typhimurium*), **151**, 891
in melanoma cells, stimulation by insulin-like growth factors (human), **153**, 1076
monocytes, induction by transforming growth factor β (human), **157**, 793
peripheral blood neutrophils and monocytes, associated activity of recombinant tumor necrosis factor α, analysis (human), **153**, 1223
Chenodeoxycholic acid
hydroxylation, conjugation, and sulfation in primary monolayer cultures of hepatocytes (rat), **154**, 1114
Chief cells
gastric, F^--stimulated pepsinogen release, role of Ca^{2+} influx (guinea pig), **152**, 161
D-Chiroinositol
detection in insulin mediator stimulating pyruvate dehydrogenase phosphatase (rat liver), **151**, 1416
o-Chloranil
near stoichiometric irreversible inactivation of bacterial collagenases, **153**, 74
Chlorate
reversible inhibition of proteoglycan sulfation (bovine endothelial cells), **154**, 365
Chloride
conductance/exchange pathways, analysis in parotid secretory granules (rat), **155**, 984
Chloride channels
activation in resting vascular smooth muscle cells, evidence for regulation by protein kinase C (rat), **155**, 882
large-conductance, analysis by patch recordings (human fibroblasts), **154**, 719
Chlorine
ATP-dependent uptake by plasma membrane vesicles, demonstration (rat brain), **154**, 108
Chlorins
photodynamic toxicity for colon carcinoma HT-29 cells: combined light and concentration dose responses for retained fraction (human), **151**, 506
Chlorobenzene
oxidation by cytochrome P450-enriched *Streptomyces griseus* extracts, **157**, 1417
Chlorodifluoroacetophenone
cholesterol esterase-inhibiting, synthesis and evaluation, **151**, 554
1-Chloro-2,4-dinitrobenzene
induction of cystine transport in erythrocytes (human), **155**, 160
Chlorophyll *a/b*
–protein-2 complex of photosystem II, 500-MHz ^1H NMR of chlorophylls (barley), **157**, 1085
Chlorophyllides
chlorophyll *a* precursor, detection in chlorophyll-free plasma membrane preparation (*Anacystis nidulans*), **154**, 839
Chlorophyllins
photodynamic toxicity for colon carcinoma HT-29 cells: combined light and concentration dose responses for retained fraction (human), **151**, 506
Chloroplasts
bundle sheath, cyclic photophosphorylation, effects of various cofactors and inhibitors (*Zea mays*), **151**, 878
electron transport, effect of platelet-activating factor (spinach), **155**, 576
mediated activation of fructose-1,6-bisphosphatase, comparison with heterogenous photochemical activation (spinach), **152**, 668
Chloroquine
effect on multidrug resistance and labeling of P-glycoprotein by vinblastine photoaffinity analog (human leukemic cells), **153**, 959
resistance in malaria, reversal independent of calcium channels (human), **155**, 476
Chlorpromazine
inhibition of
free arachidonic acid production in activated alveolar macrophages (rabbit), **156**, 947
natural killer cell activity and antibody-dependent cell-mediated cytotoxicity (human), **155**, 597
CHO cells
β_2-adrenergic receptor density and receptor-mediated cAMP accumulation, relationship, **150**, 665
expression of erythroid differentiation factor with plasmid vector, **151**, 230
fibronectin-mediated cell adhesion, stimulation by phorbol ester, **155**, 603
growth inhibition by 5α-cholest-8(14)-en-3β-ol-15-one, reduction by sodium oleate, **156**, 689
multidrug-resistant
comparison with mutant HeLa cells, **153**, 598

reduced accumulation of cyclosporin A, **152**, 552
nuclear envelope-deficient, intracellular transport of vesicular stomatitis virus G protein, **152**, 469
rapid turnover of sphingosine after synthesis *de novo* from [^{14}C]serine, **157**, 232
recombinant human angiotensinogen expression and characterization, **156**, 1103
sterol composition and morphology, 14α-ethyl-5α-cholest-7-ene-3β,15α-diol-induced changes, **157**, 359
tunicamycin-resistant, gene amplification, **156**, 1063
and V79 peplomycin-supersensitive mutant cells from lung, poly(ADP-ribose) synthetase activity, characterization and comparison, **151**, 1305
Cholecystokinin
C-terminal octapeptide, *see* Sincalide
human synthetic 33-amino acid peptide, stimulation of canine pancreatic protein secretion
comparison with cholecystokinin-8, **150**, 1251
role of sulfated tyrosine residue, **153**, 1209
inhibitory action in amylase release from isolated pancreatic acini, mechanism (rat), **154**, 1314
potassium-induced release from slices of cerebral cortex, caudato-putamen, and hippocampus incubated *in vitro*, stimulation by phorbol esters (rat), **153**, 372
Cholera toxin
ADP-ribosylation of
Nb_2 lymphoma cell membrane protein, effect of prolactin, **156**, 776
S-antigen (bovine), **156**, 1160
B subunit, regulation of thyroid cell proliferation, mechanism independent of membrane receptor function modulation (rat), **157**, 605
ADP-ribosylation factor, comparison with 24-kDa substrate for botulinum C3 ADP-ribosyltransferase (bovine brain), **152**, 957
excretion from *Escherichia coli*: potential oral vaccine for cholera, **153**, 967
induction of nuclear ADP-ribosylation in GH1 cells, **150**, 323
sensitive 40-kDa protein from pancreatic acinar cells, photoaffinity labeling with GTP-γ-azidoanilide (rat), **155**, 1051
5β-Cholestane-3α,7α,12α,26-tetrol
conversion into 3α,7α,12α-trihydroxy-5β-cholestanoic acid by hepatic mitochondria (rabbit), **153**, 267
5β-Cholestane-3α,7α,12α-triol
26-hydroxylation, catalyzing cytochrome P450, characterization (rabbit hepatic mitochondria), **157**, 30
5α-Cholest-8(14)-ene-3β,26-diol-15-one
enzymatic formation, chemical synthesis, and functional analysis (CHO-K1 cells, rat), **151**, 130
5α-Cholest-8(14)-en-3β-ol-15-one
inhibitory effect on CHO-K1 cell growth, reduction by sodium oleate, **156**, 689
Cholesterol
biosynthesis in yeast mutant erg6, **155**, 509
and ergosterol, differential binding of amphotericin B, effect of detergent sucrose monolaurate (mouse), **154**, 954; *erratum*, **156**, 1061
hepatic biosynthesis, regulation by fatty acids: effect of dietary olive oil on cytoplasmic acetoacyl-CoA thiolase, β-hydroxy-β-methylglutaryl-CoA synthase, and acetoacetyl-CoA ligase (rat), **153**, 422
hepatic levels in severe mevalonic aciduria: detection of near normal values (human), **152**, 857
macrophage, removal by triglyceride–phospholipid emulsions (mouse), **155**, 709
metabolic regulator, enzymatic formation, chemical synthesis, and functional analysis (CHO-K1 cells, rat), **151**, 130
synthesis, reduction by cAMP (human hepatoma cells), **156**, 424
Cholesterol esterase
haloketone transition-state analog inhibitors, synthesis and evaluation (porcine pancreas), **151**, 554
Cholesterol 7α-hydroxylase
hepatic microsomal, expression in obese and lean rats, comparison, **150**, 853
Cholesteryl
binding agent, incorporation into phospholipid vesicles, subsequent antibody binding: evaluation of antibody viability and specificity, **151**, 932
Cholic acid
hydroxylation, conjugation, and sulfation in primary monolayer cultures of hepatocytes (rat), **154**, 1114
Chondrocytes
articular
elastase expression, effects of cytokines and growth factors (rabbit), **155**, 786
proteoglycan synthesis, synergistic inhibition by ionophore A23187 and phorbol ester, mechanistic analysis (rabbit), **153**, 690
thrombospondin synthesis (bovine), **153**, 708
fibronectin ED-A expression, reduction in presence of dibutyryl cAMP (dog), **154**, 1088
interleukin-1-induced protease activity and cartilage proteoglycan degradation, inhibition by transforming growth factor β (rabbit), **157**, 1352
Chondroitin sulfate
inhibition of Ca^{2+}-mediated hemagglutination by serum amyloid P component (porcine skin), **150**, 212
Chromaffin granules
accumulation of 1-methyl-4-phenylpyridinium, effect on molecular motion, ^{13}C and ^{31}P NMR study (bovine), **156**, 1243
calcium pump, biochemical and immunological evidence (bovine), **155**, 656
peptide α-amidation, characterization with trinitrophenylated substrate (bovine adrenal gland), **151**, 499
Chromate
reduction by glutathione, mechanism: ESR evidence for role of glutathionyl radical and isolable Cr(V) intermediate, **156**, 137
Chromatin
native, damage induced by nuclease, analysis (rat liver), **155**, 1396
Chromium(V)
–glutathione intermediate, role in chromate reduction by glutathione, ESR evidence, **156**, 137
Chromobindin 4, *see* Endonexin

Chromogranins
stoichiometric methylation (bovine adrenal medulla), **152**, 732
Chromophores
retinol, identification in protein HC (human), **155**, 1424
Chromosomes
2
localization of gene for parathyroid hormone-like peptide (rat), **157**, 558
partial deletion in myeloid leukemias, associated deletion of homeobox gene (mouse), **156**, 1265
5, allele loss at glucocorticoid receptor locus in colorectal carcinomas (human), **150**, 591
11, close proximity of homologous oncogenes *HST1* and *INT2* (human), **157**, 828
18, allele loss at D18S6 locus in colorectal carcinomas (human), **155**, 463
21, localization of Alzheimer's disease-associated gene encoding β-amyloid protein (human), **151**, 1
Jα region involved in c-*myc*/Jα translocation, analysis and relationship to T-cell receptor α, β, and γ gene rearrangements (human lymphoma), **154**, 550
X, localization of gene coding ubiquitin-activating enzyme (tsBN75 cells), **153**, 1173
Chymotrypsinogen
release from isolated pancreatic acini, stimulation by *Pseudomonas aeruginosa* cytotoxin, associated decrease in mRNA levels (rat), **152**, 688
Cibacron Blue
and anilinonaphthalenesulfonate, application as binding agents in isolation of lipoproteins from lamprey, mammalian, and piscine sera, **154**, 752
Cilia
olfactory, role in olfactory reception (carp), **154**, 437
Citrate
differential effects on muscle phosphofructokinase activation by α-glucose 1,6-bisphosphate and fructose 2,6-bisphosphate (rat), **157**, 664
Citrate synthase
porcine, Lys 368 trimethylation mutant form expressed in and isolated from *Escherichia coli*, characterization, **157**, 1231
Clara cells
secretory protein mRNA, *in vitro* translation (rabbit lung), **153**, 470
Claviceps purpurea
clavine-producing strains, membrane fluidity and fatty acid and sterol content, effects of clomiphene, **152**, 190
Clofibrate
induced cytochrome P450 isozyme in liver, purification and characterization (rat), **156**, 282
Clomiphene
effect on fatty acids, sterols, and membrane fluidity in clavine-producing *Claviceps purpurea* strains, **152**, 190
Cloning
androgen receptor-encoding cDNA (human T47D cells), **153**, 241
α1-antitrypsin-like gene 12 kb downstream of genuine α1-antitrypsin gene (human), **155**, 634
aromatase cDNA (human), **156**, 725
basic fibroblast growth factor cDNA (rat ovary), **157**, 256
2,3-bisphosphoglycerate mutase cDNA (mouse), **156**, 874
brain natriuretic peptide precursor cDNA (pig), **157**, 410
cAMP-dependent protein kinase regulatory subunit RII_β cDNA (rat ovarian granulosa cells), **154**, 705
carboxylesterase cDNA (rat liver), **156**, 866
cDNA encoding ubiquinone-binding protein of mitochondrial complex III (human), **156**, 987
2′,3′-cyclic-nucleotide 3′-phosphodiesterase cDNA (human brain), **152**, 837
elastase structural gene (*Pseudomonas aeruginosa*), **152**, 1117
electron transfer flavoprotein α-subunit cDNA (rat liver), **155**, 300
endonexin cDNA (bovine liver), **156**, 660
esterase 1 cDNA (murine plasma), **151**, 1364
follistatin gene (pig), **152**, 717
fructose-6-phosphate,2-kinase:fructose-2,6-bisphosphatase cDNA (human liver), **153**, 328
β-galactosidase cDNA (human), **157**, 238
gastric H^+,K^+-ATPase cDNA (pig), **157**, 203
glutamate dehydrogenase precursor cDNA (human liver), **152**, 1395
γ-glutamyltranspeptidase-encoding gene (*Escherichia coli* K-12), **150**, 33
guanine nucleotide-binding protein Goα DNA (human), **150**, 811; *erratum*, **153**, 487
H protein cDNA (human liver), **151**, 758
hprt cDNA for mutation analysis, methodology (human), **151**, 487
insulin-like growth factor-binding protein cDNA (human), **152**, 1289; *erratum*, **155**, 1485
large neurofilament subunit NF-H cDNA (rat brain), **154**, 1099
15-lipoxygenase cDNA (human reticulocytes), **157**, 457
lymphocyte proliferation potentiating factor cDNA (rabbit neutrophils), **150**, 1237
metalloproteinase inhibitor gene (*Streptomyces nigrescens*), **155**, 487; *erratum*, **156**, 1419
metallothionein I gene (rabbit), **153**, 209
metallothionein II pseudogene (rabbit), **156**, 1403
monoamine oxidase B cDNA (rat liver), **157**, 970
nosiheptide resistance gene (*Streptomyces actuosus*), **156**, 517
peptide C-terminal α-amidating enzyme cDNA (*Xenopus laevis* skin), **150**, 1275
phosphoprotein phosphatase 2Aβ cDNA (rat liver), **157**, 821
platelet glycoprotein IIb gene: characterization of 5′ flanking region (human), **156**, 595
platelet membrane glycoprotein Ibα gene (human), **156**, 389
prostate antigen cDNAs, **155**, 181
protease VII gene (*Escherichia coli*), **153**, 753
protein S genes: identification of PSα gene as site of liver protein S mRNA synthesis (human), **157**, 1033
soluble guanylate cyclase 70-kDa subunit cDNA (rat lung), **157**, 1139
testicular cDNA, in identification of 52-kDa member of

steroid receptor super-family (human), **155**, 971
Clupeine
Y_I, Y_{II}, and Z forms, fluorescence analysis: evidence for globular conformation (*Clupea palasii*), **150**, 633; *erratum*, **151**, 954
Clusterin
from primary Sertoli cell-enriched culture medium, homology with sulfated glycoprotein 2 (rat), **155**, 398
Coacervation
poly(VPGVG) at biological temperatures and low concentrations, analysis, **157**, 1061
Cobalt
induction of and presence in nitrile hydratase, demonstration (*Rhodococcus rhodochrous*), **155**, 1008
Codeine
bioactivation in liver, mediation by polymorphic monooxygenase catalyzing debrisoquine 4-hydroxylation, (human), **152**, 411
Codons
proline and glycine, distribution in collagenous and noncollagenous tissue (chicken), **150**, 148
Coenzyme Q_{10}
biochemical deficiencies in HIV-infected humans, exploratory treatment, **153**, 888
Collagen
binding heat-shock protein, transformation-sensitive 47-kDa, characterization (chicken embryo), **153**, 428
binding surface complex related to VLA-2, isolation and characterization (human platelets), **153**, 217
crosslinking, effect of aging (bovine, human skin), **152**, 898
glycosylated, catalysis of vesicle membrane lipid peroxidation (rat tail), **151**, 649
guanidine-soluble type VI, enrichment in experimental osteoarthritic articular cartilage, demonstration (dog), **157**, 250
proα2(I), encoding gene, nuclear matrix-associated region, location and methylation pattern (human fibroblasts, leukocytes), **157**, 500
stimulated platelets, arachidonic acid metabolism, effect of 15-hydroperoxyeicosatetraenoic acid (human), **150**, 177
type V, selective inhibition of endothelial cell proliferation (human umbilical vein), **151**, 1060
Collagenase
bacterial, near stoichiometric irreversible inactivation by *o*-chloranil, **153**, 74
Colony-stimulating factor
granulocyte, binding sites on circulating neutrophils, characterization (human), **156**, 1026
macrophage, produced by T lymphoblastoid cells, purification and characterization (human), **152**, 1401
type 1, gene expression in carcinoma cell lines (human), **157**, 395
Complement
C3, binding to liposomes via SH residue generated by thioester bond cleavage: activation of alternative complement pathway (guinea pig, human), **151**, 743
C4, secretion, effect of tyrosine residue sulfation (HepG2 cells), **151**, 417
C5a, synthesis of anaphylatoxin, structure confirmation (pig), **151**, 1285
Complex III
yeast mitochondrial, integration into liposomes, restoration of high-potential cytochrome b_{564}, **152**, 981
Computer applications
graphic determination of preferred conformation of *N*-formyl-methionyl-leucyl-phenylalanine, **157**, 569
Concanavalin A
effects on cell binding and spreading of laminin substrates (murine melanoma cells), **156**, 411
induction of
cap formation in neutrophils, enhancement by cyclosporin A (human), **151**, 435
lymphocyte proliferation, enhancement by 1,25-dihydroxyvitamin D_3, requirement of monocytes (bovine), **152**, 545
T-cell proliferation, differential inhibition by 5-azacytidine and cytosine-arabinoside (rat), **151**, 548
interaction with heparin: isolation of fraction with higher anticoagulant activity, **155**, 216
and oligomannose-type glycopeptides, formation of homogeneous crosslinked lattices, **152**, 1076
reactivity of arylphorin subunits, analysis (*Musca domestica*), **151**, 1004
specific activation of superoxide anion generation capacity during U937 differentiation induced by phorbol myristate acetate (human), **151**, 802
stimulation of
heart sarcolemmal Na^+–Ca^{2+} exchange (rat), **154**, 245
leucine transport, role of calmodulin (human lymphocytes), **153**, 570
T-cell proliferation, inhibition by calcitonin gene-related peptide (mouse), **154**, 227
ω-Conotoxin
binding to calcium channels, properties (chicken, rabbit, rat), **150**, 1051
inhibition of peptidergic nerve terminal secretion (rat), **156**, 255
ω-Conotoxin receptors
high-affinity, coupling to distinct sites in brain synaptic plasma membrane vesicles (rat), **154**, 298
Copper
bidirectional transfer between dopamine β-monooxygenase and Cu-thionein, **153**, 558
binding to 200-kDa neurofilament protein (bovine, human spinal cord), **152**, 598
divalent, stimulation of estradiol binding in uterine cytosol: identification of promoting and inhibiting endogenous factors (rat), **152**, 783
–1,10-phenanthroline complex, nuclease activity, mutagenicity, **155**, 338
stoichiometry in ascorbate oxidase, reassessment (zucchini), **152**, 623
Copper(II)ethylenediaminetetraacetate
disproportionation of superoxide dismutase, **150**, 252
Corpora cardiaca
isolation of neuropeptides from adipokinetic/red pigment-concentrating hormone family (horsefly), **151**, 656

Cortical granules
–plasma membrane complex, associated phosphorylation activity (*Xenopus laevis* oocytes), **153**, 1025
Corticosterone
effect on tumor necrosis factor receptor affinity and cytotoxicity (human MCF-7 cells, murine L-M cells), **153**, 402
Corticotropin, *see* Adrenocorticotropin
Corticotropin-releasing factor
differential processing by placenta and hypothalamus (human), **153**, 1229
secretion into hypophysial portal blood of conscious unrestrained rams, analysis, **155**, 841
Cortisol, *see* Hydrocortisone
Creatine kinase
mitochondrial
from brain and striated muscle, distinct tissue-specific isoproteins with conserved CK framework (chicken), **151**, 408
membrane-bound, evidence of oligomeric structure by radiation inactivation method (rabbit heart), **153**, 1310
Creatine phosphate
content in post-ischemic heart, determination by ^{31}P MR spectroscopy (guinea pig), **151**, 865
Creatine phosphokinase
mitochondrial, deficiency in diabetic heart (rat), **154**, 469
Cromakalim
activation of ATP-dependent potassium channels in isolated cardiac myocytes (guinea pig), **154**, 620
Crystallin
α form
and β and γ forms, nonenzymatic glycosylation and carbamylation, prevention by aspirin (human lens), **151**, 991
covalent change during cataractogenesis (human lens), **150**, 987
Fe^{2+} oxidation, production of 43-kDa aggregate composed of A and B chains crosslinked by nonreducible covalent bonds (bovine lens), **157**, 626
Crystallization
acetylpolyamine amidohydrolase (*Mycoplana bullata*), **157**, 1169
CS 622
and vasodilator hydralazine, comparative effects on atrial natriuretic factor plasma levels after chronic treatment (spontaneously hypertensive rat), **152**, 456
Cucumber mosaic virus
associated satellite RNA, cDNA clone, biological properties *in vivo* (tomato), **151**, 388
Cyanide
–ferricytochrome *c* complex, paramagnetic, natural abundance ^{13}C NMR: assignment of hyperfine shifted heme methyl carbon resonances (equine heart), **151**, 262
Cyanogen bromide
cleavage method *in situ* in determination of internal amino acid sequence of proteins electroblotted to polyvinyldifluoride membranes, **155**, 1353
Cyclic AMP
β_2-adrenergic receptors
agonist-stimulated generation in cardiac myocytes, inhibition by immune cytokine (rat), **150**, 1
mediated accumulation in CHO cells, relationship to receptor density, **150**, 665
adrenocorticotropin receptor-mediated induction (murine leukocytes), **157**, 1205
binding sites on recombinant type I regulatory subunit of cAMP-dependent protein kinase, site-directed mutagenesis (rat brain), **153**, 1244
control of GTP pools in yeast, **150**, 1144; *erratum*, **153**, 487
dependent membrane phosphorylation, role in parathyroid hormone-induced Ca^{2+},Mg^{2+}-ATPase activity in basolateral membrane (canine kidney), **150**, 263
effect on retinol-binding protein mRNA levels in cultured Sertoli cells (rat), **152**, 1504
inhibition of DNA synthesis in aortic smooth muscle cells (rabbit), **157**, 337
intracellular levels, muscarinic receptor-mediated increase (human SK-N-SH neuroblastoma cells), **154**, 1137
levels in cultured anterior pituitary cells, augmentation by relaxin (rat), **148**, 1246; *erratum*, **150**, 1315
production in pineal gland, daytime activation *in vitro* by forskolin or isoproterenol, relationship to melatonin production (hamster), **157**, 930
prostaglandin E_2-induced accumulation in $CD4^+$ T cells, enhancement during CD2-mediated activation (human), **157**, 1396
reduction of low-density lipoprotein catabolism and cholesterol synthesis (human hepatoma cells), **156**, 424
regulation of lactate/pyruvate ratios (*Neurospora crassa*), **150**, 365
response element, absence in upstream promoter of low-density-lipoprotein receptor gene (human), **152**, 143
sensitivity of neural and non-neural protein kinase type II isozymes, comparison (rat), **156**, 801
Cyclic AMP phosphodiesterase
cGMP-activated, stimulation by insulin mediator preparation: nonstimulation of other purified insulin-activated cAMP phosphodiesterases, **156**, 290
Cyclic GMP
α_2-adrenergic receptor-mediated formation in adrenocortical carcinoma cells, inhibition by phorbol ester (rat), **156**, 905
formation in intermediate pituitary cells, effect of atrial natriuretic factor (rat), **155**, 83
Cyclic nucleotide phosphodiesterase
inhibition by synthetic peptides based on calmodulin-binding domain of myosin light chain kinase (bovine brain), **156**, 860
2′,3′-Cyclic-nucleotide 3′-phosphodiesterase
cDNA cloning and amino acid sequence (human brain), **152**, 837
Cycloheximide
protection against heat-induced protein migration and DNA repair inhibition (CHO cells), **157**, 611
Cyclooxygenase
inhibition, noninvolvement in azathioprine inhibition of prostaglandin E_2 production (rabbit eye), **157**, 727
synthesis in vascular cells *in vitro*, suppression by dexa-

methasone (rat), **157**, 1159
Cyclophosphamide
induction of very-low-density lipoprotein accumulation, relationship to lipoprotein lipase deficiency (rabbit), **154**, 633
Cyclosporin A
effect on growth and prolactin binding to Nb-2 lymphoma cells (rat), **156**, 233
enhancement of lectin-induced cap formation in neutrophils (human), **151**, 435
inhibition of proteolytic cleavage and degradation of membrane-bound protein kinase C in phorbol ester-stimulated hepatocytes (rat), **151**, 997
reduced accumulation in multidrug-resistant CHO cells, **152**, 552
transport in isolated renal proximal tubule cells, inhibition by calcium channel blockers (rabbit), **157**, 1226
Cyclosporin D
inhibition of phorbol ester-induced biological effects in murine skin and Ca^{2+}/calmodulin-dependent elongation factor 2 phosphorylation *in vitro*, **150**, 545
Cyclosporin H
inhibition of phorbol ester-induced biological effects in murine skin and Ca^{2+}/calmodulin-dependent elongation factor 2 phosphorylation *in vitro*, **150**, 545
Cystatin
effects of human cathepsins D, H, and L (chicken), **154**, 765
Cysteamine
and corticotropin, effects on [^{3}H]thymidine incorporation into DNA of organ-cultured adrenal explants (rat), **157**, 95
Cysteine
Cys 86, role in antiviral activity of murine interferon α1 (L929 cells), **155**, 714
insulin receptor α-subunit region rich in, identification as insulin-binding site (human), **157**, 321
residues in interleukin 1β, structure–function analysis (human), **150**, 1106
single active-site residue in streptococcal NADH peroxidase, identification, **153**, 261
thiol peroxyl radical, formation from thiyl radical reaction with molecular oxygen, ESR study, **155**, 405
Cysteine-conjugate aminotransferase
transamination of leukotriene E_4, analysis (rat), **155**, 1119
Cysteine protease
from skin secretions, characterization (*Xenopus laevis*), **153**, 1193
Cysteine proteinase inhibitor
E-64, reduction of proteinurea in experimental model of glomerulonephritis (rat), **155**, 1318
Cystic fibrosis
dermal fibroblasts from patients, increased sulfate uptake, **152**, 99
Cystine
oligopeptides with, positive and negative nuclear Overhauser effects, simultaneous observation due to segmental motion, **151**, 153
transport in erythrocytes, induction by oxidative stresses (human), **155**, 160
Cytochalasin E
enhancement of protein kinase C-dependent serotonin secretion in platelets, **150**, 745
Cytochrome b_5
mRNA, nucleotide sequence (human liver), **156**, 576
Cytochrome b_{564}
high-potential, restoration by integration of yeast mitochondrial complex III into liposomes, **152**, 981
Cytochrome *c*
electron transfer to cytochrome *c* reductase, inhibition by formation of electrostatically stabilized complex at low ionic strength (yeast), **151**, 429
sulfonated phenyl isothiocyanate derivative, synthesis and application in superoxide anion measurement (horse), **156**, 1175
Cytochrome c_{551}
electron self-exchange, measurement (*Pseudomonas* spp.), **150**, 1044
Cytochrome c_{552}
electron transfer reaction at edge-oriented pyrolytic graphite electrodes, analysis (*Euglena gracilis*), **157**, 1021
Cytochrome-*c* oxidase
electrophoretic monodispersity, demonstration (bovine heart, *Paracoccus denitrificans*), **151**, 623
kinetics after reconstitution into liposomes, effects of nucleotides (bovine heart, *Paracoccus denitrificans*), **153**, 525
subunit III, expression in *Paracoccus denitrificans*, **154**, 1260
Cytochrome-*c* reductase
electron transfer from cytochrome *c*, inhibition by formation of electrostatically stabilized complex at low ionic strength (yeast), **151**, 429
Cytochrome *d* complex
oxidation reaction, product analysis (*Escherichia coli*), **155**, 243
Cytochrome *o* complex
oxidation reaction, product analysis (*Escherichia coli*), **155**, 243
Cytochrome P450
active center, localization in microsomal membranes (rat liver), **150**, 426
aflatoxin B_1-specific, preparation and characterization (hamster liver), **153**, 441
alcohol-inducible form 3a, encoding genes, isolation and partial characterization (rabbit), **150**, 10
aromatization and 19-hydroxylation of androgens (rat brain), **150**, 311
binding to benzphetamine-derived substrates, active site model, **150**, 996
dbl/bufI, catalyzing debrisoquine 4-hydroxylation, mediation of codeine bioactivation in liver (human), **152**, 411
diabetes-inducible, purification and characterization (rat liver), **152**, 680
enriched extracts of *Streptomyces griseus*, oxidation of xenobiotics, **157**, 1417
estradiol hydroxylation-associated

immunohistochemical detection in kidney and liver (rat), **150**, 925
isozymes, encoding cDNAs, identification as members of P450IID subfamily (rat liver), **156**, 681
ethanol-inducible
binding to acetaldehyde *in vivo* (rat liver), **154**, 584
centrilobular expression in liver (rat), **157**, 55
ligand-dependent maintenance in primary hepatocyte cell cultures (rat), **150**, 436
molecular regulation (hamster liver), **150**, 304
gene transcription elongation, regulation by heme (rat liver), **151**, 737; *erratum*, **152**, 1511
hepatic levels
decline produced by tumor transplantation, prevention by tin-protoporphyrin inhibition of heme oxygenase (mouse), **150**, 822
and microsomal ethanol oxidation, effects of obesity (rat), **157**, 315
17α-hydroxylase-associated
cDNA, deduced amino acid sequence, expression, and secondary structural configuration (rat testis), **157**, 705
mRNA levels in Leydig's cells, hormonal regulation (rat), **154**, 151
induction by phenobarbital, inhibition by phorbol ester: evidence for protein kinase C regulation of induction (rat liver), **153**, 728
isozymes
catalyzing 26-hydroxylation of 5β-cholestane-3α,7α,-12α-triol, characterization (rabbit hepatic mitochondria), **157**, 30
isolated from liver after clofibrate treatment, purification and characterization (rat), **156**, 282
lanosterol 14-demethylase activity, conversion to inactive form by single amino acid substitution: primary structure deduction from cloned DNAs (yeast), **155**, 317
male-specific renal isozyme, mediation of 3-methoxy-4-aminoazobenzene mutagenic activation (mouse), **152**, 843
metabolism of carbon tetrachloride, effect of oxygen: comparison between isozymes (rat), **152**, 1463
mRNA, synthesis in *Candida maltosa* grown on hexadecane, indirect induction by oxygen limitation, **150**, 859
N-nitrosodimethylamine demethylase-associated, effects of growth hormone (rat liver), **155**, 392
phenobarbitone-inducible gene products b and e, age effects (rat), **157**, 1403
Cytochrome P452
decreased expression in hepatocyte nodules during hepatocarcinogenesis (rat), **152**, 921
Cytokines
encoding mRNAs containing UA-rich instability sequences, selective ribonuclease, assay technique (murine macrophages), **152**, 973
Cytosine
base analog, mispairing ability, *ab initio* molecular orbital study, **153**, 552
Cytosine-arabinoside
and 5-azacytidine, differential inhibition of mitogen-induced T-cell proliferation (rat), **151**, 548
Cytosol
adrenocortical, phosphorylation of calmodulin at threonine residues (guinea pig), **156**, 1333
mammalian cell, immunochemical detection of α-subunit of G protein G_z, **157**, 883

D

Dactinomycin
induction of P-glycoprotein gene expression in multidrug-resistant leukemia cell line (human), **155**, 754
Debrisoquine
4-hydroxylation, catalyzing polymorphic monooxygenase, mediation of codeine bioactivation in liver (human), **152**, 411
Deglycosylation
human choriogonadotropin, effect on subunit interactions, **156**, 1271
Dehydroepiandrosterone, *see* Prasterone
Dendrotoxin I
binding proteins, neuronal K^+ channel-associated, detection of different populations (*Dendroaspis polylepis*), **153**, 231
Denny–Jaffe reagent
^{125}I-labeled, in radiolabeling of interferon α receptors, **157**, 1264
Deoxyadenosine 5′-triphosphate
pools in cultured muscle cells, effects of 3′-azido-3′-deoxythymidine (human), **154**, 124
Deoxyadenylate
antibodies, binding to double-stranded DNA, **154**, 118
Deoxycholic acid
hydroxylation, conjugation, and sulfation in primary monolayer cultures of hepatocytes (rat), **154**, 1114
Deoxycytidine
metabolism: salvage into DNA and into phospholipid precursors (human lymphocytes), **155**, 923
Deoxycytidine kinase
affinity purification from leukemic T-lymphoblasts: avoidance of structural and kinetic artifacts arising from limited proteolysis (human), **156**, 92
Deoxycytidine 5′-triphosphate
pools in cultured muscle cells, effects of 3′-azido-3′-deoxythymidine (human), **154**, 124
Deoxycytidylate
antibodies, binding to double-stranded DNA, **154**, 118
Deoxyguanosine 5′-triphosphate
pools in cultured muscle cells, effects of 3′-azido-3′-deoxythymidine (human), **154**, 124
Deoxyhemoglobin
tetrameric, α- and β-subunits, and deoxymyoglobin, active site models: electronic structures and Mössbauer parameters, comparative quantum-chemical analysis, **155**, 1255
Deoxymyoglobin
and α- and β-subunits of tetrameric deoxyhemoglobin, active site models: electronic structures and

Mössbauer parameters, comparative quantum-chemical analysis, **155**, 1255
3-Deoxy-D-*glycero*-D-*galacto*-nonulosonic acid
glycoprotein with, isolation from egg vitelline envelope (rainbow trout), **153**, 172
3-Deoxy-D-*manno*-octulosonate-8-phosphate synthase
catalysis of C–O bond cleavage of phospho*enol*pyruvate, **157**, 816
Deoxyribonuclease I
digestion of nucleosomal core particles, aberrant kinetics (sea urchin sperm), **155**, 66
footprinting of restriction enzymes, **155**, 779
inhibition by actin covalently crosslinked to brain actin depolymerizing factor through exposed sulfhydryls (chicken embryo), **155**, 890
trans-N-Deoxyribosylase
in synthesis of 2′,3′-dideoxynucleosides by *trans*-glycosylation (*Lactobacillus helveticus*), **155**, 829
Deoxythymidine 5′-triphosphate
pools in cultured muscle cells, effects of 3′-azido-3′-deoxythymidine (human), **154**, 124
Dephosphorylation
–phosphorylation, myosin light chain in aortic smooth muscle homogenate, effect of okadaic acid (swine), **153**, 156
Depolarization
K^+-induced, in cerebral cortex slices, elevation of inositol 1,4,5-trisphosphate levels: mass measurements by radioreceptor assay (rat), **157**, 684
splenic lysosomes, induction by K^+ (mouse, rat), **156**, 211
Dequalinium
inhibition and photoinactivation of mitochondrial F_1-ATPase (bovine heart), **152**, 968
Dermatan sulfate, *see* Chondroitin sulfate
Dermorphin
and analogs, resistance to *in vitro* enzymatic degradation, effects of D-amino acid substitutions (rat brain), **156**, 125
Desferrioxamine
stimulation and inhibition of iron-dependent lipid peroxidation (rat brain synaptosomes), **153**, 933
Desulfation
tyrosine *O*-sulfate of secreted fibronectin, alteration of binding affinities (rat 3Y1 fibroblasts), **154**, 1094
Devapamil
reversal of chloroquine resistance in malaria (human), **155**, 476
Development
perinatal, brown fat iodothyronine 5′-deiodinase activity, evidence for differential physiological modulation (rat), **156**, 493
Dexamethasone
and antiglucocorticoid RU 486, interaction with renal glucocorticoid receptor, comparison (rat), **153**, 365
enhancement of catecholamine-induced lipolysis: direct *in vitro* effects on β-adrenoreceptor-coupled adenylate cyclase system (rat adipocytes), **153**, 489
induction of glucose-6-phosphohydrolase and translocase *in vitro*, effect of insulin (2S FAZA hepatoma cells), **153**, 307
inhibition of
arachidonic acid release from phosphatidylcholine during suppression of yeast phagocytosis in murine macrophage cultures, **153**, 583
cytotoxic activity of tumor necrosis factor (murine fibroblasts), **153**, 109
interleukin 1β gene transcription (U937 cells), **156**, 269
reduction of tumor necrosis factor receptor affinity and cytotoxicity (human MCF-7 cells, murine L-M cells), **153**, 402
stimulation of
kininogen production by hepatoma cells (rat), **154**, 1160
lipocortin and prostaglandin production in amnion cells (human), **151**, 137
suppression of cyclooxygenase mRNA levels and prostanoid synthesis in vascular cells *in vitro* (rat), **157**, 1159
Dextran T-10
diffusion rate, in demonstration of small pores in outer membrane by rate assay (*Pseudomonas aeruginosa*), **156**, 470
Diabetes
effect on guanine nucleotide exchange factor activity in skeletal muscle and heart (rat), **156**, 706
inducible cytochrome P450, purification and characterization (rat liver), **152**, 680
non-insulin-dependent, associated insulin binding and insulin receptor tyrosine kinase activity in liver, analysis (rat), **152**, 1015
streptozocin-induced
associated decrease in motor nerve conduction velocity, inhibition by prostaglandin E1 analog (rat), **150**, 225
associated deficiency of cardiac mitochondrial creatine phosphokinase (rat), **154**, 469
enhancement of apolipoprotein E synthesis and secretion by injured sciatic nerves (rat), **155**, 283
Diacylglycerol
accumulation in cultured REF52 cells, stimulation by vasopressin, **152**, 565
activation of protein kinase C, modulation by long-chain acyl-CoA (rat brain), **152**, 987
antecedence by phosphatidylinositol 4,5-bisphosphate in protein kinase C activation (rat brain), **155**, 18
effect on protein kinase C activation by oleic acid (bovine spleen, rat brain), **152**, 825
induced changes in tubulin phosphorylation, analysis (human platelets), **151**, 1250
potentiation of protein kinase C activation by *cis* and *trans* fatty acids (rat brain), **154**, 20
production
in BC3H-1 myocytes *in vitro*, effects of insulin and phorbol ester, **154**, 1345
in dorsal root ganglion × neurotumor hybrid cells, induction by bradykinin, **152**, 724
role as source of arachidonic acid for formation of 12-hydroxyeicosatetraenoic acid mediating angiotensin II-induced adrenal aldosterone synthesis (human), **156**, 717

Diacylglycerol kinase
decreased translocation in *ras*-transformed cells (mouse), **154**, 959
inhibitor R 59022
effect on [^{3}H]phosphatidic acid formation in response to formyl-methionyl-leucyl-phenylalanine (human neutrophils), **153**, 1097
potentiation of bombesin stimulation of protein kinase C and DNA synthesis (murine Swiss 3T3 cells), **155**, 561
regulation during transition from quiescence to proliferation (*Dictyostelium discoideum*), **150**, 118
water-soluble endogenous regulator, detection (rat brain), **151**, 1088
Diamine oxidase, *see* Amine oxidase (copper-containing)
2,6-Diaminopurine 2′,3′-dideoxyriboside
inhibition of hepatitis B virus replication (duck), **156**, 1144
Dianisidine
hydrogen peroxide-dependent oxidation, in analysis of hydroperoxidase activity of lipoxygenase, **155**, 1075
Diazepam
natural, increase during germination (wheat), **157**, 1436
Dibromobimane
induced internal crosslinking of S1 heavy chain from smooth muscle, analysis (chicken), **152**, 1
Dibutyryl cAMP
activation of dolichol-phosphate mannosyltransferase *in vitro* (rat liver), **155**, 615
induction of type II 5′-deiodinase in cultured astrocytes (rat brain), **151**, 1164
inhibition of ED-A fibronectin expression in chondrocytes (dog), **154**, 1088
Dicarboxylic acids
aliphatic, residues in phospholipids in vasodepressor lipid extract (bovine brain), **155**, 863
3′,4′-Dichlorobenzamil
effect on agonist-induced protein phosphorylation and serotonin release in platelets (human), **154**, 101
[2,6-Dichloro-4-dimethylaminophenyl]isopropylamine
inhibition of rapid Ca^{2+} release from isolated cardiac and skeletal sarcoplasmic reticulum membranes (dog, rabbit), **154**, 1
Dictyostelium discoideum
cell-cycle-dependent transformation competence, analysis, **154**, 54
cell-free preparations, detection of Mg^{2+}-dependent guanylate cyclase, **150**, 405
G-protein α-subunits, immunological detection, **156**, 757
transition from quiescence to proliferation, regulation of diacylglycerol kinase, **150**, 118
Dicyclohexylcarbodiimide
binding to F_1-ATPase–inhibitor protein complex, analysis (bovine cardiac mitochondria), **152**, 867
2′,3′-Didehydro-2′,3′-dideoxyguanosine
carbocyclic, potent and selective activity against human immunodeficiency virus *in vitro*, **156**, 1046
2′,3′-Dideoxyadenosine
inhibition of hepatitis B virus replication (duck), **156**, 1144
metabolism in T lymphocytes, biochemical and genetic analysis (human), **151**, 788
2′,3′-Dideoxycytidine
structural features, determination by X-ray crystallography, **151**, 608
2′,3′-Dideoxyguanosine
inhibition of hepatitis B virus replication (duck), **156**, 1144
2′,3′-Dideoxynucleosides
synthesis by enzymatic *trans*-glycosylation (*Lactobacillus helveticus*), **155**, 829
2′,3′-Dideoxythymidine
permeation of erythrocyte membrane by nonfacilitated diffusion (human), **154**, 825
Diet
co-ingestion of fish oil triacylglycerols and ethyl esters with high-fat meal, effect on absorption of eicosapentaenoic and docosahexaenoic acids (human), **156**, 960
gammalinolenic acid-enriched, alteration of cutaneous eicosanoids (guinea pig), **154**, 967
high-salt, associated elevated intracellular Ca^{2+} in Dahl-sensitive rats, analysis with Fura-2, **154**, 380
iron-enriched, effect on DNA repair in lymphocytes (rat), **154**, 698; *erratum*, **156**, 610
protein-deficient and -enriched, protective effects on acute ammonium intoxication (rat), **156**, 506
Diethyldithiocarbamate
and related compounds, differential responses of UDPglucuronosyltransferases and β-glucuronidase (murine liver), **153**, 149
Diethylstilbestrol
effect on tumor necrosis factor receptor affinity and cytotoxicity (human MCF-7 cells, murine L-M cells), **153**, 402
Differentiation-inducing factor
fibroblast-derived, effect on monocytoid and myeloid leukemia cells (human), **155**, 24
Differentiation-inhibiting factor
autocrine, effect on human and murine early burst-forming erythroid progenitors (chicken eythroleukemia cells), **157**, 762
Digitalis
-like endogenous ligand for Na^+,K^+-ATPase, tissue distribution (rat), **152**, 818
-like factor
detection in plasma (bovine, dog, human, rat), **152**, 322
in urine, purification and characterization (human), **154**, 847
Digoxin
-like substance isolated from plasma, mass spectrometric analysis (human), **152**, 1435
24,25-Dihydrolanosterol
levels in CHO-K1 cells, effect of 14α-ethyl-5α-cholest-7-ene-3β,15α-diol, **157**, 359
D-7,8-Dihydroneopterin-3′-triphosphate
enzymatically active, chemical synthesis, **152**, 1193
5,15-Dihydroperoxyeicosatetraenoic acid
identification as intermediary in arachidonic acid conversion to lipoxin A and B isomers by soybean lipoxygenase, **153**, 840
Dihydropyridine
binding sites, direct coupling of GTP-binding protein (rat), **156**, 1279

calcium channel-blocking, targets in skeletal muscle and functions in excitation–contraction coupling (mouse), **156**, 1324
derivative PN 200-110, binding affinities and Ca^{2+} current inhibition in smooth muscle, comparison (equine portal vein), **152**, 1165
inhibition of calcium flux in pituitary tumor cell line 235-1, prevention by pertussis toxin pretreatment (rat), **151**, 361
Dihydropyridine receptors
coupling to calcium channels, evidence for: voltage dependence of nitrendipine inhibition of catecholamine release in intact adrenals (cat), **153**, 912
regulation in BC_3H1 muscle cells, analysis, **152**, 769
trans-3,4-Dihydroxy-3,4-dihydrobenz[*a*]anthracene
7-alkyl substitution, effect on reversible binding to bovine thymic DNA, **154**, 789
1,25-Dihydroxyvitamin D_3
enhancement of concanavalin A-induced lymphocyte proliferation, requirement of monocytes (bovine), **152**, 545
role in 3T3-L1 proliferation and differentiation (mouse), **151**, 1122
stimulation of
Ca^{2+}-ATPase in aortic smooth muscle cells (rat), **150**, 1138
$^{45}Ca^{2+}$ uptake by cultured aortic smooth muscle cells (rat), **152**, 1388
and tumor necrosis factor α, synergistic induction of growth inhibition, differentiation, and c-*myc* mRNA decrease in HL-60 cells, **152**, 1151
1,25-Dihydroxyvitamin D_3 receptors
heterologous up-regulation by parathyroid hormone and parathyroid hormone-like peptide (rat osteoblast-like cells), **156**, 588
5,7-Diisopropyl-tocopheroxyl
reaction with alkyl hydroperoxides, kinetic analysis, **155**, 1046
4,4′-Diisothiocyanostilbene-2,2′-disulfonic acid
effect on
Ca^{2+} release from hepatic microsomes (rat), **151**, 396
intracellular pH and transferrin and iron uptake (rabbit reticulocytes), **150**, 1256
irreversible inhibition of thiamin triphosphatase (eel electric organ), **154**, 942
modification of dopamine D_1 receptors, effect on agonist and antagonist affinities (canine brain), **152**, 933
Diltiazem
inhibition of cyclosporin A transport in isolated renal proximal tubule cells (rabbit), **157**, 1226
3,3′-Dimethoxybenzidine, *see* Dianisidine
Dimethylarginine
-rich sequence conserved in nuclear RNA-binding proteins, detection in B-36 nucleolar protein (*Physarum polycephalum*), **155**, 1278
2′,4′-Dimethylbenzamil
effect on agonist-induced protein phosphorylation and serotonin release in platelets (human), **154**, 101
7,12-Dimethylbenz[*a*]anthracene, *see* 9,10-Dimethyl-1,2-benzanthracene
9,10-Dimethyl-1,2-benzanthracene
skin tumorigenicity, augmentation by impairment of immunological surveillance (C3H mouse), **151**, 148
Dimethylnitrosamine, *see N*-Nitrosodimethylamine
Dimethyl sulfoxide
induction of HL-60 cell differentiation to granulocytic form, association with resistance to antitumor ether-linked phospholipids (human), **156**, 1
maintenance of thyroid cells in suspension culture: facilitation of hormone synthesis and release (human), **155**, 100
regulation of heme synthesis in hepatoma cells (human), **153**, 869
Dimyristoylphosphatidylglycerol
minimal interactions of biologically active salmon calcitonin analogs with, demonstration, **152**, 203
1,2-Dioctanoyl-glycerol
induction of protein kinase C translocation and inhibition of proliferation (human MCF-7 cells), **151**, 458
Dioxin
enhancement of 2- and 16α-hydroxylation of estradiol-17β in MCF-7 breast cancer cells (human), **157**, 515
Dioxin receptors
association with M_r 90,000 heat shock protein: structural kinship with glucocorticoid receptor (rat liver), **155**, 801
Dioxygenase
metabolism of benzo[*a*]pyrene, pathway analysis (*Selenastrum capricornutum*), **152**, 540
Dipalmitoylphosphatidylcholine
liposomes, gel phase, hydrolysis by phospholipase A_2, induction of latency period in time course, **151**, 851
Dipeptidyl carboxypeptidase I
cardiac and pulmonary isozymes, hydrolysis of atriopeptin 2, analysis (human), **151**, 109
cDNA clones, isolation: identification of distinct mRNAs for pulmonary and testicular isozymes (rabbit), **155**, 678
inhibitor CS 622, and vasodilator hydralazine, comparative effects on atrial natriuretic factor plasma levels after chronic treatment (spontaneously hypertensive rat), **152**, 456
inhibitor isolation and characterization (tuna muscle), **155**, 332
molecular weight and shape, neutron scattering analysis (porcine lung), **154**, 1144
renal, oxidation-induced increase (rat), **153**, 1032
Diphenyl
oxidation by cytochrome P450-enriched *Streptomyces griseus* extracts, **157**, 1417
Diphenylbutylpiperidines
calcium channel-blocking, targets in skeletal muscle and functions in excitation–contraction coupling (mouse), **156**, 1324
Diphosphates
allylic and homoallylic, diphosphate moieties, different roles in prenyltransferase reaction, **156**, 396
Diphtheria toxin
specific cleavage by urokinase, analysis (human), **157**, 747

Discoidin I
structural organization, developmental changes, detection by limited proteolysis (*Dictyostelium discoideum*), **152**, 1332
Disulfide bonds
assignment for recombinant soluble interleukin 2 receptor (human), **154**, 372
between Cys(1) and Cys(3), demonstration in synthetic nonapeptide derived from interferon γ signal sequence and N-terminus (human), **157**, 836
recombinant interleukin 6, assignment (mouse), **157**, 364
reduction, effect on salivary mucin hydrophobicity: role of associated and covalently bound lipids (rat), **151**, 1046
role in folding and secretion of human lysozyme in yeast, **152**, 962
Disulfide isomerase
cDNA, nucleotide sequence: homology with iodothyronine 5′-monodeiodinase (rat liver), **155**, 1297
Disulfiram
and related compounds, differential responses of UDPglucuronosyltransferases and β-glucuronidase (murine liver), **153**, 149
Dixanthogen
and related compounds, differential responses of UDPglucuronosyltransferases and β-glucuronidase (murine liver), **153**, 149
DNA
adrenal, [^{3}H]thymidine incorporation into organ-cultured explants, effects of corticotropin and cysteamine (rat), **157**, 95
amplification by polymerase chain reaction, application in apolipoprotein E genotyping (human blood), **157**, 1212
binding
associated domain of tetracycline repressor, sequence comparison with estrogen receptor (human), **150**, 463
associated properties of synthetic spermine analog, analysis, **152**, 1441
and cleavage by synthetic compound related to amsacrine and bleomycin, characterization, **152**, 695
reversible, of *trans*-3,4-dihydroxy-3,4-dihydrobenz[*a*]-anthracene, effect of 7-alkyl substitution (bovine thymus), **154**, 789
–cellulose, binding of IM-9 lymphoblastoid cell glucocorticoid receptor, effect of heat shock protein HSP90 (human), **151**, 1226
complementary
S-adenosyl-L-homocysteine hydrolase, nucleotide sequence, in deduction of amino acid sequence (*Dictyostelium discoideum*), **153**, 359
aldehyde dehydrogenase signal peptide, nucleotide sequence (rat hepatic mitochondria), **150**, 1083
androgen receptor, cloning, structure, and expression (human T47D cells), **153**, 241
angiotensin-converting enzyme, isolation: identification of distinct mRNAs for pulmonary and testicular isozymes (rabbit), **155**, 678
aromatase, cloning, immunochemical identification, and sequence analysis (human), **156**, 725
basic fibroblast growth factor, site-directed mutagenesis, stabilizing effects (human), **151**, 701
2,3-bisphosphoglycerate mutase, cloning and sequencing (mouse), **156**, 874
brain natriuretic peptide precursor, cloning and sequence analysis (pig), **157**, 410
cAMP-dependent protein kinase regulatory subunit RII_β, cloning and sequence analysis (rat ovarian granulosa cells), **154**, 705
carboxylesterase, cloning and sequencing: evidence for multigene family (rat liver), **156**, 866
cucumber mosaic virus-associated satellite RNA, biological properties *in vivo* (tomato), **151**, 388
2′,3′-cyclic-nucleotide 3′-phosphodiesterase, cloning (human brain), **152**, 837
cytochrome P450C-M/F isozymes, identification as members of P450IID subfamily (rat liver), **156**, 681
cytochrome $P450_{17\alpha}$, deduced amino acid sequence, expression, and secondary structural configuration (rat testis), **157**, 705
electron transfer flavoprotein α-subunit, cloning and sequencing (rat liver), **155**, 300
endo A, isolation from 8-cell-stage embryo (mouse), **154**, 890
endonexin, cloning and characterization (bovine liver), **156**, 660
esterase 1, cloning (murine plasma), **151**, 1364
expression library, antibody screening: identification of proteins synthesized in bone cells (rat), **151**, 382
ferredoxin, sequence analysis (chicken testis), **155**, 379
to 52-kDa member of steroid receptor super-family, cloning and sequence analysis (human testis), **155**, 971
fructose-6-phosphate,2-kinase:fructose-2,6-bisphosphatase, cloning, sequence analysis, and expression (human liver), **153**, 328
GABA-A receptor α-subunit, isolation and sequencing (human), **156**, 1039
β-galactosidase, cloning, sequencing, and expression analysis (human), **157**, 238
β1,4-galactosyltransferase
comparison of two independent clones (mouse), **156**, 1223
identification of full-length coding sequence (human), **157**, 657
gastric ($H^+ + K^+$)-ATPase, cloning and sequence determination (pig), **157**, 203
glucosamine-6-sulfatase, homology with steroid sulfatase (human), **157**, 218
glucose transporter, cloning and use in analyzing mRNA alteration during tissue development (rabbit), **154**, 1204
glutamate dehydrogenase precursor, cloning and sequence analysis (human liver), **152**, 1395
glutathione peroxidase, nucleotide sequence (rat liver), **154**, 1024
H protein-encoding, cloning and sequence analysis (human liver), **151**, 758
hprt gene, specific cloning and sequencing for mutation analysis, methodology (human), **151**, 487
insulin-like growth factor-binding protein, cloning and

sequencing (human), **152**, 1289; *erratum*, **155**, 1485
iodothyronine 5′-monodeiodinase, homology with protein disulfide isomerase (rat liver), **155**, 1297
large neurofilament subunit NF-H, isolation and characterization (rat brain), **154**, 1099
Leydig's cell cytochrome $P450_{17\alpha}$, partial length, characterization (rat), **154**, 151
15-lipoxygenase, cloning and primary structure (human reticulocytes), **157**, 457
lymphocyte proliferation potentiating factor, cloning and sequencing (rabbit neutrophils), **150**, 1237
lysozyme, sequencing, and enzyme expression and secretion by yeast (human placenta), **150**, 794
mitochondrial ATP synthase complex α-subunit precursor, encoding clones, isolation and characterization (bovine liver), **152**, 264
for MK1 gene expressed in embryonal carcinoma cells and during embryogenesis, cloning and sequence analysis (mouse), **151**, 1312
monoamine oxidase B, molecular cloning (rat liver), **157**, 970
NADH dehydrogenase 24-kDa iron–sulfur protein subunit, amino acid sequence deduction (rat liver), **157**, 914
nonspecific cross-reacting antigen
deduced sequences: identity to NCA-50 and indication of post-translational modifications (human breast tumor hepatic metastasis), **153**, 1105
sequence analysis (human lung carcinoma cells), **150**, 89
ovarian basic fibroblast growth factor, cloning and sequencing: tissue distribution of associated mRNA (rat), **157**, 256
peptide C-terminal α-amidating enzyme, cloning and sequencing (*Xenopus laevis* skin), **150**, 1275
phosphoprotein phosphatase 2Aβ (rat liver), **157**, 821
prostate antigen, molecular cloning and characterization of different forms, **155**, 181
pyruvate dehydrogenase β-subunit, isolation (human liver), **150**, 904
soluble guanylate cyclase 70-kDa subunit, molecular cloning (rat lung), **157**, 1139
thymosin β_{10}, sequence analysis (human kidney), **152**, 862
tyrosinase, sequence analysis (murine melanoma cells), **153**, 1301
ubiquinone-binding protein of mitochondrial complex III, cloning and sequencing (human), **156**, 987
cytochrome $P450_{14DM}$ and mutated form, amino acid sequence deduction (yeast), **155**, 317
dimethylnitrosamine-induced alkylation, repair, inhibition by chronic ethanol consumption (rat), **152**, 423
double-stranded, binding to deoxyadenylate and deoxycytidylate antibodies, **154**, 118
excision repair in xeroderma pigmentosum group C cells, differential regulation in transformed cells and primary fibroblasts (human), **156**, 557
fragmentation, tumor necrosis factor-induced, analysis in HL-60 cells, **157**, 963
genomic, sequence homologous to 3′-untranslated region of rat uricase mRNA, identification (human), **155**, 1266
guanine nucleotide-binding protein Goα, cloning and sequencing (human), **150**, 811; *erratum*, **153**, 487
hairpin loops, interaction with complementary strand by triplet of base pairs, **157**, 986
haloethylnitrosurea-treated, associated 7-alkylguanines, release by 3-methyladenine-DNA glycosylase II (*Escherichia coli*), **155**, 1261
Holliday junctions, cleavage by human placental endonuclease, **156**, 1054
homologous oligonucleotide hybridization probes, preparation from heterologous gene sequences and probes (yeast), **157**, 154
host-derived, in recombinant products, rapid quantitative detection at 1-pg level by supersensitive dot-hybridization method (yeast), **152**, 9
human, enriched in repetitive sequences, specific binding to component in brain protein kinase C preparations (rat), **156**, 222
human immunodeficiency virus, homologous recombination in cultured cells, analysis of influencing factors (human), **157**, 1051
human polyoma JC virus enhancer containing nuclear factor I-binding sequences, analysis with murine brain nuclear extracts, **157**, 419
hypomethylation
in ethionine-induced preneoplastic nodules (rat hepatocytes), **150**, 739
in gastric fundic mucosa, role in expression of pepsinogen A genes (human), **151**, 275
interaction with
carbonyl-labeled methyl- and ethylnitrosourea *in vivo* and *in vitro* (bovine thymus, rat tissues), **150**, 835
DNA topoisomerase II, recognition sites, analysis with antitumor drug VP-16, **151**, 1233
[^{35}S]methionine *in vivo*, effects of chemical carcinogens (rat liver), **157**, 373
mitochondrial
in anucleate blood cells, quantitation (human), **155**, 1360
with deletion, maternal inheritance in family with mitochondrial myopathy, demonstration, **154**, 1240
lipid peroxidation-mediated damage, detection (rat liver), **153**, 191
Moloney murine leukemia virus, slipped structures, evidence for presence within enhancer region (*Escherichia coli*), **156**, 417
normal leukocyte, cloned *hst* gene, transformation of NIH3T3 cells (human), **151**, 965
polymorphic structure, probing with osmium tetroxide (*Escherichia coli*), **150**, 731
repair
inhibition, heat-induced, protection by cycloheximide (CHO cells), **157**, 611
in lymphocytes, effect of chronic iron overload (human, rat), **154**, 698; *erratum*, **156**, 610
ribosomal, transcription, putative termination sites (rice), **157**, 68
and RNA, levels in *Anaplasma marginale*-infected and

uninfected erythrocytes during experimental anaplasmosis (bovine), **152**, 30
salvage of deoxycytidine into, analysis (human lymphocytes), **155**, 923
sequence dependence of ATP hydrolysis by RecA protein, **157**, 127
sequence downregulating interferon-induced gene, mapping (human), **156**, 701
stimulation of protein phosphorylation in HeLa whole-cell and nuclear extracts, **157**, 535
supercoiled, left-handed Z-form segment-induced transcriptional block, removal by nonhistone protein HMG1 (porcine thymus), **153**, 334
superhelical templates with mitochondrial promoters, preference of mitochondrial RNA polymerase for (human), **152**, 22
T → A mutation within ATA box, induction of β-thalassemia (human), **153**, 741
templates, self-assembly of porphyrins on, analysis (bovine thymus), **157**, 350
transfection in lymphoblastoid cells by electropermeation (human), **151**, 982
ultraviolet-induced strand breaks, repair, effect of azidothymidine (human peripheral lymphocytes), **157**, 1369
DNA glycosylase
5-hydroxymethylcytosine-releasing, detection in thymus extract (bovine), **151**, 1173
DNA nucleotidylexotransferase
gene putative promoter region, isolation (human), **154**, 91
DNA polymerase α
in mitogen-activated lymphocytes, analysis (bovine), **153**, 1324
specific interaction with homologous acetylated HMG1 protein *in vitro* (bovine thymus, Guerin ascites tumor cells), **154**, 918
DNase I, *see* Deoxyribonuclease I
DNA synthesis
African swine fever virus, inhibition by (*S*)-9-(3-hydroxy-2-phosphonylmethoxypropyl)adenine (monkey kidney cells), **154**, 27
in aortic smooth muscle cells, independent inhibition by protein kinase C, cyclic AMP, and interferon α/β (rabbit), **157**, 337
in bone marrow cells, augmentation by platelet-activating factor (guinea pig), **157**, 563
in cultured renal cortical cells, stimulation by lutropin (rat), **150**, 506
effect of antibacterial agent DuP 721 (*Bacillus subtilis*), **150**, 965
in fibroblasts
insulin-like growth factor I-stimulated, inhibition and potentiation by growth hormone-dependent IGF-binding protein (human), **156**, 199
platelet-derived growth factor-stimulated, inhibition by interferon (mouse), **150**, 1207; *erratum*, **151**, 1461
hepatic, stimulation by tumor necrosis factor *in vivo* (rat), **153**, 576
inhibition by *Clostridium perfringens* enterotoxin, mechanistic analysis (Vero cells), **153**, 699
in lymphocytes, stimulation by swainsonine (mouse), **150**, 615
in Swiss 3T3 cells, potentiation by diacylglycerol kinase inhibitor R 59022, **155**, 561
DNA topoisomerase
type I, inhibition by sodium stibogluconate and urea stibamine (*Leishmania donovani*), **152**, 605
type II
interaction with DNA, recognition sites, analysis with antitumor drug VP-16, **151**, 1233
mediated reactions in potassium-containing solutions, modulation by glutamate, **152**, 808
Docosahexaenoic acid
absorption from fish oil triacylglycerols and ethyl esters, effect of co-ingestion with high-fat meal (human), **156**, 960
fish oil, ingested in triacylglycerol, free acid, and ethyl ester forms, comparative absorption (human), **152**, 328
Dolichol-phosphate mannosyltransferase
activation by dibutyryl cAMP (rat liver), **155**, 615
Dolichyl phosphate
hepatic levels in severe mevalonic aciduria: detection of near normal values (human), **152**, 857
L-Dopa
cerebral, evaluation of radiobrominated *m*-tyrosine analog as positron-emission tomography tracer, **150**, 1027
Dopamine
reduction of intracellular calcium levels: role of calcium influx (rat), **151**, 913
role in adenylate cyclase regulation (*Paracentrotus lividus*, *Sphaerechinus granularis*), **154**, 758
urinary levels, effect of atrial natriuretic factor (dog), **156**, 1070
Dopamine β-monooxygenase
and Cu-thionein, bidirectional transfer of copper, **153**, 558
Dopamine receptors
D_1, chemical modification, effect on agonist and antagonist affinities (canine brain), **152**, 933
D_2
immuno-photoaffinity labeling in striatal membranes (bovine), **155**, 930
purification from striatal membranes (bovine), **156**, 602
Dot blotting
in rapid quantitative detection of host-derived DNA in recombinant products at 1-pg level (yeast), **152**, 9
Doxorubicin
effect on
histone H1 acetylation in sensitive (LoVo/Dx) and resistant (LoVo) colon adenocarcinoma cell lines (human), **155**, 1221
pyruvate transport in cardiac mitochondria (rat), **156**, 1302
interactions with Ca^{2+}-binding site, analysis with Tb^{3+} (GH3/B6 pituitary tumor cells), **151**, 679
perfused heart, direct detection of paramagnetic species (rat), **153**, 275
5-Doxyl stearic acid methyl ester
as membrane spin probe, ESR spectra, in monitoring of reaction rates of partitioning compounds: hydrolysis

of local anesthetic analog, **152**, 344
Drosophila melanogaster
identification of 5,6,7,8-tetrahydropterin and 5,6,7,8-tetrahydrobiopterin, **152**, 49
Dynorphin A
derived peptide, solvent-exposed NH groups, analysis by FT–IR and ^{1}H NMR spectroscopy, **151**, 1220
effect on prostatic carcinoma cell growth, **153**, 722
Dysbetalipoproteinemia
familial, associated HpaI restriction site, localization in APOC1 gene promoter region (human), **152**, 1282

E

Ecdysone 20-monooxygenase
cytochrome P450-dependent, azadirachtin effects (fly, mosquito, moth), **154**, 559
Eggs, *see also* Oocytes
extraction of phosphorylated sperm-specific histone H1: analysis of phosphopeptide maps (sea urchin), **151**, 1200
vitelline envelope, isolation of deaminated neuraminic acid-rich glycoprotein (rainbow trout), **153**, 172
Ehlers-Danlos syndrome
type IV fibroblasts, type III procollagen secretion, temperature effects (human), **150**, 140
Eicosanoids
cutaneous, alteration by gammalinolenic acid-enriched diet (guinea pig), **154**, 967
related to 15-hydroperoxyeicosatetraenoic acid, inhibition of 5-lipoxygenase (human leukocytes), **155**, 38
synthesis by mast cell secretory granules (rat), **156**, 1308
Eicosapentaenoic acid
fish oil
absorption from triacylglycerols and ethyl esters, effect of coingestion with high-fat meal (human), **156**, 960
ingested as triacylglycerols, ethyl esters, or free acids, comparative absorption (human), **152**, 328
inhibition of natural killer cell activity *in vivo* and *in vitro* (mouse), **150**, 497
5,8,11,14,17-*cis*-Eicosapentaenoic acid
production by fungal mycelia: enzyme activation at low temperature (*Mortierella alpina*), **150**, 335
Elastase
expression by human dermal fibroblasts and synoviocytes and rabbit articular chondrocytes, effects of cytokines and growth factors, **155**, 786
structural gene, cloning and characterization (*Pseudomonas aeruginosa*), **152**, 1117
Elastin
fixation method, stress/strain characterization (bovine ligamentum nuchae), **151**, 686
production in aortic smooth muscle cells, promotion by recombinant transforming growth factor β (pig), **154**, 895
Elastin receptors
67-kDa subunit, monoclonal antibody to, generation and characterization (bovine ocular zonule), **151**, 822
Electric fields
effects on bacteriophage M13, detection by electro-optical measurements, **151**, 768
Electroconvulsive shock
induced inositol trisphosphate accumulation in cerebral cortex and hippocampus, inhibition by carbamazepine (rat), **153**, 128
Electron spin resonance
in analysis of light-induced conformational changes in nitroxide-labeled rhodopsin (bovine), **155**, 1412
membrane spin labels, in monitoring of reaction rates of partitioning compounds: hydrolysis of local anesthetic analog, **152**, 344
saturation transfer, in assessment of phase transitions in microsomal membranes (tomato), **153**, 104
Electron transfer
in chloroplasts, effect of platelet-activating factor (spinach), **155**, 576
between cytochrome *c* and cytochrome-*c* reductase, inhibition by formation of electrostatically stabilized complex at low ionic strength (yeast), **151**, 429
cytochrome c_{552} at edge-oriented pyrolytic graphite electrodes, analysis (*Euglena gracilis*), **157**, 1021
heterogenous photochemical and chloroplast-associated, comparative fructose-1,6-bisphosphatase activation (spinach), **152**, 668
methanogenic, associated iron–sulfur centers, identification (*Methanobacterium thermoautotrophicum*), **153**, 87
transmembrane, associated changes in intracellular redox and energy status (*Cuscuta* protoplasts), **156**, 940
Electropermeation
with square shaped electric impulsions, for DNA transfection into lymphoblastoid cells (human), **151**, 982
Electrophoretic shifts
Ca^{2+}-dependent, demonstration in galactosyltransferase modifier protein α-lactalbumin (bovine), **157**, 944
Electrostatic interactions
between small aromatic rings in peptides and proteins, calculation of magnitude and orientation: implications for angiotensin II, **153**, 1296
Elongation factors
EF-1α, activity and amounts in aging and immortal fibroblasts, heat shock-related decline (human), **152**, 169
EF-2
Ca^{2+}/calmodulin-dependent phosphorylation *in vitro*, inhibition by cyclosporines D and H, **150**, 545
specific epidermal phosphatase, stimulation by phorbol ester *in vivo*: augmentation of protein synthesis (mouse), **153**, 1129
EF-Tu, purification and properties (*Calderobacterium hydrogenophilum*), **155**, 384
Embden–Meyerhof pathway
glucose metabolism, role in ATP production during spore germination, analysis with mutant lacking hexokinase (*Bacillus megaterium*), **151**, 48
Embryo
early, growth and muscle differentiation *in vivo*, effects of anti-insulin receptor antibodies (chicken), **153**, 142
mid-gestation period, expressed MK1 gene, cDNA cloning

and sequence analysis (mouse), **151**, 1312
Encephalomyocarditis virus
antiviral activity of murine interferon α1, critical role of conserved residues arginine 33 and tyrosine 123 (L929 cells), **155**, 714
Endocytic pathway
and autophagic pathway, prelysosomal convergence (rat hepatocytes), **151**, 40
Endoglycosidase
release of oligosaccharides with reducing-end *N*-acetylgalactosamine from mucus glycoprotein in *Streptomyces* sp. OH-11242 culture medium, **151**, 422
Endonexin
cDNA, cloning and characterization (bovine liver), **156**, 660
Endonuclease
placental, cleavage of Holliday junctions in DNA (human), **156**, 1054
Endopeptidase
KEX2 gene-encoded, homology with subtilisin-like serine proteases (yeast), **156**, 246
Endoplasmic reticulum
rough, membrane association with docking protein, mechanistic analysis (human), **150**, 111
β-Endorphin
effect on prostatic carcinoma cell growth, **153**, 722
modification by transglutaminase *in vitro*, identification of glutamine-11 and lysine-29 as acyl donor and acceptor sites (human), **154**, 735
Endothelial cells
aortic
calcitonin gene-related peptide receptors, identification and characterization (bovine), **151**, 1113
cytosolic free calcium levels *in vitro*, effects of superoxide and lipid peroxide (pig), **152**, 301
effect of calcium channel modulators *in vitro* (bovine), **154**, 591
mitogenic activity of ovine uterine fluids (bovine), **156**, 108
nitric oxide formation from L-arginine, relationship to endothelium-dependent relaxation of vascular rings (pig), **153**, 1251
pH changes *in vitro*, induction by ATP (bovine), **152**, 1304
released nitric oxide and relaxant factor, quantitative and kinetic characterization (pig), **154**, 236
thromboxane A_2 receptors, identification (rat), **151**, 1352
capillary
cerebral, specific atrial natriuretic factor receptors, characterization (bovine), **157**, 308
myocardial, detection of insulin-like growth factor receptors: potential regulation of IGF-I transport to cardiac muscle (rat), **152**, 93
pulmonary, internalization and degradation of heparin-binding growth factor I (mouse), **151**, 957
cardiac valve, glycoprotein synthesis *in vitro*: lack of fibronectin production (pig), **153**, 46
pulmonary artery, phosphatidylcholine phosphodiesteratic cleavage *in vitro*, stimulation by bradykinin (bovine), **157**, 1271
umbilical vein
B-cell stimulatory factor/interleukin 6 production (human), **153**, 1045; *erratum*, **157**, 850
c-*fos* protooncogene expression *in vitro*, induction by interleukin 1 (human), **152**, 1104
neutrophil chemotactic factor synthesis, induction by monokines (human), **156**, 1340
and neutrophils, membrane potential, differential effects of leukotriene B_4 and platelet-activating factor (human), **153**, 805
proliferation, selective inhibition by type V collagen (human), **151**, 1060
prostacyclin synthesis induction, additive effects of interleukin 1 and tumor necrosis factor (human), **156**, 1007
transient $[Ca^{2+}]_i$ increase, induction by platelet-activating factor (human), **154**, 910
Endothelin
effect on atrial natriuretic factor release from cultured cardiac myocytes (rat), **155**, 167
induction of Ca^{2+} release from intracellular stores in cultured aortic smooth muscle cells (rat), **156**, 312
inhibition of renin release
in dynamic superfusion system of juxtaglomerular cells (rat), **157**, 1164
from isolated glomeruli (rat), **155**, 1244
stimulation of phospholipase C in cultured vascular smooth muscle cells (bovine, human, rat), **157**, 1360
structure–activity relationships, role of C-terminal moiety (pig), **156**, 1182
vasoconstrictive action
in cultured aortic smooth muscle cells, mechanism (rat), **154**, 868; **157**, 977
in isolated aorta, comparison with Ca^{2+} agonist Bay K 8644 (rat), **156**, 186
Endotoxins
Bacillus thuringiensis, 130-kDa, mosquito larvicidal activity, localization on 72-kDa amino-terminal fragment, **153**, 294
Escherichia coli
early effects on vasopressin-stimulated breakdown and metabolism of inositol lipids in hepatocytes (rat), **155**, 151
effect on colonic glutathione levels (rat), **151**, 844
induced changes in pulmonary contractile response and β-adrenoceptor function, role of platelet-activating factor (guinea pig), **152**, 527
induced zinc accumulation in cultured hepatocytes, mediation by metallothionein synthesis, **152**, 874
Enflurane
inhibition of calcium efflux from hepatic mitochondria (rat), **155**, 978
potency, correlation with ^{19}F spin–spin relaxation times in brain and adipose tissues (rat), **151**, 1039
Enkephalin
solution and membrane structure, infrared spectroscopy, **150**, 245
5-Enolpyruvylshikimate-3-phosphate synthase, *see* 3-Phosphoshikimate 1-carboxyvinyltransferase

Enterobacter aerogenes
cell-free extracts, detection of carbon-phosphorus lyase, **157**, 190
Enterotoxin
Clostridium perfringens
effects on intracellular levels and transport of uridine, thymidine, and leucine, role in macromolecular synthesis inhibition in Vero cells, **153**, 699
type A 8-6, effect on viability and macromolecular synthesis in Vero cells, **151**, 1371
type A, formation of ion-permeable channels in lipid bilayer membrane, **156**, 551
Enzyme kinetics
rapid-equilibrium random and abortive ordered mechanisms, distinction using alternative substrates or kinetic isotope effects, **152**, 406
Enzyme-linked immunosorbent assay
in measurement of transamidating activities of factor $XIII_a$ and transglutaminases (guinea pig, human), **152**, 505
Eosinophils
formation of leukotriene C_4, induction by arachidonic acid in absence of other stimuli (human), **153**, 676
Epidermal growth factor
binding to uterine membranes during peri-implantation period (rat), **153**, 564
effect on
cytoplasmic pH in cultured thyroid cells (pig), **157**, 346
protein kinase C in cultured intestinal crypt cells (rat), **154**, 278
high-affinity binding sites, detection in renal membranes (rabbit), **154**, 312
induced aortic smooth muscle cell proliferation, effect of transforming growth factor β (rat), **157**, 301
induced fibroblast proliferation, regulation by oxygen concentration (human), **153**, 952
production of inositol phosphates and augmentation of cytoplasmic free calcium in cultured thyroid cells (pig), **151**, 530
related immunoreactive factor secreted by MCF-7 breast cancer cells, identification as estrogen-responsive gene product (human), **155**, 366
salivary, role in maintenance of physicochemical characteristics of oral and gastric mucosal mucus coat (rat), **152**, 1421
Shope fibroma virus growth factor-associated activity in newborn mice, **154**, 497
stimulation of
insulin-sensitive phosphatidylinositol-glycan hydrolysis in BC3H-1 myocytes, **156**, 1346
phosphatidylinositol turnover without activation of protein kinase C (A431 cells), **155**, 877
Epidermal growth factor receptors
biosynthesis in A431 cells: post-translational glycosylation-independent acquisition of tyrosine kinase autophosphorylation activity, **153**, 96
cathepsin L-induced degradation, inhibition by c-Ha-*ras* gene products (A431 cells), **151**, 78
down-regulation in fibroblasts, effect of oxygen concentration (human), **153**, 952
expression in keratinocytes, effects of 8-methoxypsoralen and ultraviolet light A (human), **157**, 590
mRNA
expression in regenerating liver (rat), **150**, 412
levels in T-47D breast cancer cells, regulation by progestin (human), **150**, 192
150- and 170-kDa forms, differential alkaline hydrolysis and multiple-site autophosphorylation (human A431 cells), **153**, 183
phosphorylation by tumor promoter thapsigargin at threonine 669 (human A431 cells), **157**, 740
Epinephrine
effect on parathyroid hormone inhibition of phosphate uptake in cultured renal cells (opossum), **155**, 74
and norepinephrine, identification as vasoactive substances in erythrocyte plasma membrane (human), **154**, 1003
potentiation of thrombin-induced responses in platelets, role of Na^+/H^+ antiport (human), **151**, 178
Epithelial cells
hepatic, γ-glutamyl transpeptidase induction by all-*trans*-retinoic acid *in vitro* (rat), **157**, 1039
jejunal crypt, protein kinase C, effects of growth- and differentiation-inducing factors (rat), **154**, 278
renal proximal tubule, alterations in intermediate filament proteins *in vitro*, analysis (rat), **157**, 1316
thyroid, expressing v-*ras* genes, increased protein kinase C activity (rat), **157**, 1093
Epithelioid cells
293, interferon gene transcription, modulation by positive and negative cellular factors (human), **154**, 1338
Epitopes
α-bungarotoxin, isolation of associated peptide fragments and localization (*Bungarus multicinctus*), **155**, 870
and cation exchange, structural relationship: cation binding sites on actin (rabbit, scallop), **152**, 368
on cationic peanut peroxidase, characterization by monoclonal antibodies, **156**, 500
9,10-Epoxy-12-octadecenoate
synthesis by neutrophil microsomes (dog, guinea pig, human), **152**, 1310
Epstein–Barr virus
transformation of peripheral blood lymphocytes
from cutaneous T-cell lymphoma patients, reduction by recombinant interferon α2b treatment, **153**, 448; *erratum*, **155**, 538
effect of carboxyethyl γ-aminobutyric acid on establishment and growth (human), **150**, 931
transformed and primary xeroderma pigmentosum group C cells, differential regulation of excision repair (human), **156**, 557
Ergosterol
and cholesterol, differential binding of amphotericin B, effect of detergent sucrose monolaurate (mouse), **154**, 954; *erratum*, **156**, 1061
Erythrocytes
acetylcholinesterase, glycosylinositol phospholipid anchor, detection of alkylacylglycerol molecular species (bovine), **150**, 271
amphotericin B toxicity, effect of detergent sucrose monolaurate (mouse), **154**, 954; *erratum*, **156**, 1061
Anaplasma marginale-infected and uninfected, nucleic

acid levels during experimental anaplasmosis (bovine), **152**, 30
crosslinked with glutaraldehyde, general properties and significance as blood substitute (human), **156**, 970
cystine transport, induction by oxidative stresses (human), **155**, 160
defective uroporphyrinogen decarboxylase in familial porphyria cutanea tarda, mechanism: roles of metabolic lesion and endogenous porphyrinemia (human), **154**, 39
from essential hypertension patients, calpastatin defect, characterization, **157**, 867
hexose monophosphate pathway, regulation under oxidative stress, role of hexokinase (human), **155**, 423
infrared spectroscopy of single cell (human), **156**, 752
membrane association of protein kinase C, induction by protein kinase inhibitor staurosporine (human), **154**, 1273
membrane microviscosity and post-transfusion survival, correlation (human), **154**, 387
membrane proteins, proteolysis, inhibition by synthetic calpain inhibitor (rat), **157**, 1117
membranes, permeation by 2′,3′-dideoxythymidine by nonfacilitated diffusion (human), **154**, 825
mitochondrial DNA, quantitation (human), **155**, 1360
Na^+/K^+ pump, inhibition by polyene antibiotic amphotericin B (human), **157**, 692
protein carboxyl methyltransferase isozymes I and II, characterization (human), **151**, 1136
small-molecular-weight G-proteins, purification and characterization (human), **156**, 889
vasoactive substances in plasma membrane acetone extract, identification as epinephrine and norepinephrine (human), **154**, 1003

Erythroid cells
early burst-forming, inhibitory effect of avian erythroleukemia cell autocrine differentiation-inhibiting factor (human, mouse), **157**, 762
leukemic cell line with characteristics of, analysis of erythropoietin receptor (human), **154**, 902
progenitors, stimulation *in vitro* by atrial natriuretic factor in physiological concentrations (human), **156**, 15

Erythroid differentiation factor
expression in CHO cells with plasmid vector, **151**, 230
induction of follicle-stimulating hormone receptor expression on cultured granulosa cells (rat), **156**, 668
modulation of follicular granulosa cell functions (rat), **153**, 281

Erythromycin
and derivatives, inhibition of ^{125}I-motilin binding to smooth muscle (rabbit duodenum), **150**, 877; *erratum*, **151**, 954

Erythropoietin
production by renal carcinoma cells, role of hydrogen peroxide (human), **154**, 773

Erythropoietin receptors
in leukemic cell line with erythroid characteristics, analysis (human), **154**, 902

Escherichia coli
adaptive response induced by *N*-methyl-*N*-nitrosourea, effects of metal ions, **157**, 1124
anaerobic, detection of ribonucleotide reductase, **155**, 747
compartmentalization of catalases, **154**, 392
excretion of cholera toxin: potential oral vaccine for cholera, **153**, 967
expression of
human c-*raf*-1 oncogene proteins, **152**, 1045
human interferon γ, modulation by site-directed mutagenesis, **151**, 598
rat hepatic aldehyde dehydrogenase: enzyme purification and characterization, **152**, 940
growth delay, induction by near-ultraviolet illumination, roles of $tRNA^{Phe}$ and $tRNA^{Pro}$, **150**, 979
intestinal, production of anorexigenic substances (rat), **153**, 1167
minicells, prediction of signal sequence-dependent protein translocation, **150**, 371
misincorporation of *de novo* synthesized norleucine into recombinant interleukin 2, methods for control, **156**, 733
polyamine-requiring strains, protein synthesis, inhibition by aminoglycoside antibiotics, **150**, 947
porcine Lys 368 trimethylation mutant citrate synthase expressed in and isolated from, characterization, **157**, 1231
protease VII-deficient mutant, isolation and characterization, **153**, 753
strain lacking Fe and Mn superoxide dismutases, oxygen enhancement ratio, **150**, 866

Esterase
type I, cDNA cloning (murine plasma), **151**, 1364

Estradiol
binding to cytosolic proteins, endogenous mediators in malignant and normal breast tissue, comparison (human), **150**, 1131
binding in uterine cytosol, stimulation by divalent copper: identification of promoting and inhibiting endogenous factors (rat), **152**, 783
effect on tumor necrosis factor receptor affinity and cytotoxicity (human MCF-7 cells, murine L-M cells), **153**, 402
promotion of white fat cell lipolytic activity, role of increased adenylate cyclase catalytic activity (rat), **154**, 1151
type 17β
effect on Leydig's cell cytochrome $P450_{17\alpha}$ mRNA levels (rat), **154**, 151
2- or 16α-hydroxylation in MCF-7 breast cancer cells, enhancement by dioxin (human), **157**, 515
induction of increased estrogen receptor RNA in breast cancer cells (human), **155**, 943
oxidation by cytochrome P450-enriched *Streptomyces griseus* extracts, **157**, 1417

Estradiol 17β-dehydrogenase
active-site lysine residues, chemical modification (human placenta), **152**, 789

5(10)-Estrene-3β,17β-diol
produced by granulosa cells from C_{19} aromatizable androgens, formation and metabolism (pig), **155**, 144

Estrogen
activation of pS2 gene transcription, mediation by 5′ flanking region (human MCF-7 cells), **151**, 306
induced oviduct proliferation, associated down-regulation of c-*myc*, c-*fos*, and *erb*-B genes (chicken), **150**, 82
regulation of estrogen receptor mRNA levels in responsive breast cancer cells (human), **155**, 1113
responsive gene, encoding of epidermal growth factor-like immunoreactive factor in MCF-7 breast cancer cells (human), **155**, 366
Estrogen receptors
chemical characterization by protein sequence analysis (bovine), **156**, 116
in estrogen-dependent pituitary tumor, triiodothyronine induction of increased levels (rat), **152**, 44
mRNA levels
in estrogen-responsive breast cancer cells, regulation by estrogen (human), **155**, 1113
in receptor-positive and -negative breast cancer cells, effect of estrogen (human), **155**, 943
nonsteroid binding component, sequence analysis (bovine uterus), **151**, 1156
sequence comparison with DNA-binding domain of tetracycline repressor (human), **150**, 463
Estrous cycle
associated changes in superoxide radical and superoxide dismutase levels, analysis (rat), **157**, 146
Ethane
respiratory production in selenium- and vitamin E-deficient rats, effect of 3-methylindole, **153**, 535
Ethanol
chronic consumption, inhibition of repair of dimethylnitrosamine-induced DNA alkylation (rat), **152**, 423
differential regulation of inhibitory and stimulatory G proteins in neural cells, **155**, 138
–HCl induced gastric ulcer, suppression by metallothionein-II intravenous administration (rat), **151**, 725
inducible cytochrome P450, ligand-dependent maintenance in primary hepatocyte cell cultures (rat), **150**, 436
inhibition of carnitine palmitoyltransferase I in short-term incubated hepatocytes (rat), **154**, 682
oxidation by hepatic microsomes, effect of obesity (rat), **157**, 315
stimulation of hepatic tyrosine aminotransferase, role of acceleration of enzyme synthesis (rat), **155**, 1471
Ethidium bromide, *see* Homidium bromide
Ethionine
effect on *in vivo* [^{35}S]methionine interaction with DNA (rat liver), **157**, 373
induction of preneoplastic hepatocyte nodules, associated DNA hypomethylation (rat), **150**, 739
α-[(2*S*,6*R*)-6-[(1*S*)-1-Ethoxycarbonyl-3-phenylpropyl]amino-5-oxo-2-(2-thienyl)perhydro-1,4-thiazepin-4-yl]acetic acid • HCl, *see* CS 622
7-Ethoxycoumarin
oxidation by cytochrome P450-enriched *Streptomyces griseus* extracts, **157**, 1417
Ethyl aminobenzoate
and other general anesthetics, effects on nerve impulse blockade and on proteinaceous target site, comparison (squid giant axon), **154**, 47
14α-Ethyl-5α-cholest-7-ene-3β,15α-diol
induced changes in sterol composition and morphology, analysis (CHO-K1 cells), **157**, 359
Ethyl esters
fish oil, absorption of eicosapentaenoic and docosahexaenoic acids from, effect of coingestion with high-fat meal (human), **156**, 960
N-Ethylmaleimide
and iodoacetamide, comparative effects on bisphosphoglycerate mutase (human erythrocytes), **153**, 945
Ethylnitrosourea
carbonyl-labeled, interaction with DNA *in vivo* and *in vitro* (bovine thymus, rat tissues), **150**, 835
ET-18-OCH_3, *see* 1-*O*-Octadecyl-2-*O*-methyl-*rac*-glycero-3-phosphocholine
Exercise
trained rat, regulatory mechanism of adenylate cyclase in adipocyte membranes, **151**, 1262
Exopeptidase
pro-oxytocin-processing, isolation from pituitary neurosecretory granules (bovine), **156**, 898
Extracellular matrix
decreased synthesis in scurvy, role of humoral factor (guinea pig), **152**, 1490
Eye
cornea, angiogenic activity of omental and subcutaneous adipose tissue, comparison (rabbit), **153**, 347
interleukin-1-induced inflammation, inhibition by platelet-activating factor antagonist (rabbit), **154**, 429
prostaglandin E_2 production, inhibitory effect of azathioprine, mechanism independent of cyclooxygenase inhibition (rabbit), **157**, 727
retina, *see* Retina
retinol-binding protein synthesis, analysis (rat), **157**, 1078
transthyretin synthesis, evaluation (bovine, rat), **151**, 905

F

α-Factor
male pheromone, directed synthesis of *Bacillus stearothermophilus* α-amylase in yeast, **152**, 76
Factor IX
derived peptide containing γ-carboxyglutamic acid, inhibition of prothrombin activation (human), **152**, 1207
Factor X
derived peptide containing γ-carboxyglutamic acid, inhibition of prothrombin activation (human), **152**, 1207
Factor $XIII_a$
transamidating activity, measurement by ELISA (human plasma), **152**, 505
Farnesyl-diphosphate synthase, *see* Geranyl*trans*transferase
Fatty acids
cis and *trans*, activation of protein kinase C and potentiation by diacylglycerol (rat brain), **154**, 20
content in clavine-producing *Claviceps purpurea* strains, effect of clomiphene, **152**, 190
dependent hydrogen peroxide production, demonstration

in *Lactobacillus*, **152**, 113
fish oil, ingested as triacylglycerols, free acids, and ethyl esters, comparative absorption (human), **152**, 328
free, in hemolymph, transport and utilization (*Triatoma infestans*), **157**, 465
oxidation in liver, inhibition by bezafibrate and bezafibroyl CoA (rat), **157**, 1148
oxidation products, effects on protein kinase C (rat brain), **155**, 1374
synthesis in isolated hepatocytes, differential effects of 1-oleoyl-2-acetylglycerol and phorbol ester (rat), **151**, 193
unsaturated, association with Gc vitamin D-binding protein, **153**, 1019
very-long-chain, deficient oxidation in X-linked adrenoleukodystrophy, role of impaired peroxisomal activation of fatty acids (human), **153**, 618
Feeder cell phenomenon
quantitative aspects: mechanistic implications, **150**, 1037
Ferredoxin
amino acid sequence, deduction from cDNA (chicken testis), **155**, 379
Ferredoxin–$NADP^+$ reductase
limited proteolysis: evidence for domain structure (bovine adrenocortex), **152**, 177
Ferrichrome
synthetic analogs, growth-promoting activity, evaluation (*Arthrobacter flavescens*), **157**, 389
Ferricytochrome *c*
–cyanide complex, paramagnetic, natural abundance ^{13}C NMR: assignment of hyperfine shifted heme methyl carbon resonances (equine heart), **151**, 262
Ferritin
H chains, mRNA, regulation by thyrotropin (rat thyroid), **150**, 287
Fibers
bioelastomeric, nucleation and accretion at biological temperatures and low concentrations, **157**, 1061
Fibrils
amyloid, formed from segment of pancreatic islet amyloid protein, analysis, **155**, 608
Fibrin
binding by fibroblast-secreted fibronectin, effect of tyrosine *O*-sulfate desulfation (rat), **154**, 1094
Fibrinogen
association with monocytes: evidence for constitutive expression of fibrinogen receptors and role of MAC-1 antigen in binding (human), **156**, 477
platelet surface receptor GPIIb-IIIa-specific, effect on Ca^{2+} movement and cytoskeletal organization in activated platelets (human), **154**, 258
Fibrinogen receptors
GPIIb-IIIa complex, ligands for, effects on Ca^{2+} movement and cytoskeletal organization in activated platelets (human), **154**, 258
Fibrinolysis
by magnetic urokinase, *in vitro* analysis (human), **152**, 739
and receptors for plasminogen and urokinase, parallel induction by interferon γ (U937 cells), **155**, 418
Fibroblast growth factor
basic
and acidic, detection in adult cardiac myocytes (rat), **157**, 1336
cDNA cloning and sequencing and tissue distribution of associated mRNA (rat ovary), **157**, 256
promotion of cartilage repair *in vivo* (rabbit), **156**, 611
purification from brain: identification of M_r 22,000 immunoreactive form (rat), **155**, 1161
receptor purification from brain (rat), **155**, 583
regulation of luteinizing hormone receptor expression in cultured granulosa cells (rat), **156**, 634
stabilization by site-directed mutagenesis (human), **151**, 701
stimulation of aromatase activity in immature Leydig cells (pig), **151**, 163
Fibroblasts
abundant 56-kDa protein with low-affinity androgen binding: possible member of steroid/thyroid receptor family (human genital skin), **155**, 907
from acatalasia patients, analysis of molecular defects, **153**, 59
aging and immortal, active elongation factor 1α activity and amounts, heat shock-related decline (human), **152**, 169
Balb/c 3T3
coupling of calcium gating system to type II insulin-like growth factor receptors (mouse), **154**, 9
heparan sulfates with antithrombin III affinity and anticoagulant potency, isolation (mouse), **151**, 327
c-*erb* A oncogene expression, induction by *n*-butyrate (human colon), **150**, 259
c-H-*ras* oncogene-induced transformation, inhibition by cotransfected polynucleotides with alternating purine–pyrimidine sequences (rat embryo), **152**, 449
complementary, from patients with Zellweger syndrome and related disorders, peroxisome assembly after fusion, kinetic analysis, **152**, 1083
from cystic fibrosis patients, increased sulfate uptake, **152**, 99
diploid, production of tissue-type plasminogen activator, enhancement by proteose peptone (human), **150**, 1230
DNA synthesis, insulin-like growth factor I-stimulated, inhibition and potentiation by growth hormone-dependent IGF-binding protein (human), **156**, 199
early responses to platelet-derived growth factor, interferon effects (mouse), **150**, 1207; *erratum*, **151**, 1461
from Ehlers-Danlos syndrome type IV patients, type III procollagen secretion, temperature effects, **150**, 140
elastase expression, effects of cytokines and growth factors (human), **155**, 786
epidermal growth factor-induced proliferation and EGF-receptor down-regulation, regulation by oxygen concentration (human), **153**, 952
H-*ras*-transformed, enhanced expression of 2ar/osteopontin phosphoproteins (mouse, rat), **157**, 166
from hypophosphatasia patients, accumulation of phosphoethanolamine, **154**, 948
from infantile generalized *N*-acetylneuraminic acid storage disease patients, impaired proteolytic processing of

lysosomal *N*-acetyl-β-hexosaminidase *in vitro*, **152**, 83
interleukin 1β gene expression, induction by interleukin 1α and 1β (human skin), **156**, 1209
intracellular Ca^{2+} mobilization by DL-*myo*-inositol 1,4,5-trisphosphorothioate (mouse), **150**, 626
L929
amphotericin B toxicity, effect of detergent sucrose monolaurate (mouse), **154**, 954; *erratum*, **156**, 1061
internalization of natural and recombinant interferon γ, comparison (mouse), **157**, 109
large-conductance chloride channel, analysis by patch recordings (human), **154**, 719
[Leu^{13}-ψ(CH_2NH)Leu^{14}]bombesin activity as specific bombesin receptor antagonist, characterization (mouse), **155**, 359
-like L cells, nerve growth factor synthesis, promotion by equine serum (mouse), **150**, 723
-like transformation of hepatocytes, induction by novobiocin and butyrate (human), **155**, 305
mitogenic activity of ovine uterine fluids (mouse), **156**, 108
and monocytes, interleukin-1-stimulated prostaglandin E_2 release, opposite effects of interferon γ (human), **157**, 1197
NIH 3T3
bradykinin-induced generation of inositol 1,4,5-trisphosphate, effects of pertussis toxin, extracellular Ca^{2+}, and protein kinase C down-regulation (mouse), **157**, 1429
and EL2, proliferation and c-*fos* expression, comparative effects of transforming growth factor β (mouse, rat), **151**, 298
functional expression of human and rat tyrosine hydroxylase genes (mouse), **157**, 1341
metastatic v-Ha-*ras*-transformed, suppression of tropomyosin isoform 2 synthesis (mouse), **157**, 1111
ras-mediated induction of 92-kDa metalloproteinase: association with malignant phenotype (mouse), **154**, 832
ras-transformed, decreased diacylglycerol kinase translocation (mouse), **154**, 959
regulation of stably transfected c-*myc* hybrid gene, effects of serum (mouse), **157**, 379
transformation by cloned *hst* gene from normal human leukocyte DNA (mouse), **151**, 965
[Val 12]Ha-*ras*-transformed, growth, effect of genistein (mouse), **157**, 183
v-Ki-*ras*-transformed, in analysis of effects of GTP-binding proteins on adenylate cyclase activity, **153**, 1214
normal and GM_1-gangliosidosis, β-galactosidase synthesis and early processing, comparison (human), **152**, 794
oncogene transfection, effect on polyamine biosynthesis and transport (rat), **157**, 264
platelet-derived growth factor-stimulated phospholipase activity, decrease associated with high-level c-*ras* gene expression, **150**, 937
proα2(I)collagen gene, nuclear matrix-associated region, location and methylation pattern (human), **157**, 500
from Progeria donors, elevation of c-*myc* expression (human), **155**, 996
from progressive systemic sclerosis patients, inositol 1,4,5-trisphosphate formation, effect of bradykinin, **156**, 1077
psoriatic, cAMP-dependent protein phosphorylation, effect of retinoic acid (human), **156**, 263
radiation-induced apoptosis *in vitro*, inhibition by tumor promoters (mouse), **155**, 324
secreted interferon β_2 forms, phosphorylation (human), **152**, 1144
Swiss 3T3
Ca^{2+} response, desensitization by platelet-derived growth factor, bradykinin, and ATP: single-cell studies with quantitative digital video fluorescence microscopy (mouse), **151**, 1205
clone 3T3-L1, proliferation and differentiation, role of 1α,25-dihydroxyvitamin D_3 (mouse), **151**, 1122
nuclear phospholipid metabolism, induction of rapid changes by insulin-like growth factor I, **154**, 1266
protein kinase C activity and DNA synthesis, bombesin stimulation, potentiation by diacylglycerol kinase inhibitor R 59022, **155**, 561
transformation with
c-*myc* gene, role of GD3 ganglioside (rat), **150**, 760
various oncogenes, induction of sialosylparagloboside neosynthesis, **150**, 766
transforming growth factor β-induced proliferation, role of G-proteins (mouse), **152**, 1228
transport of glycine, *in vitro* analysis (human), **152**, 617
xeroderma pigmentosum group C, primary and transformed cells, differential regulation of excision repair (human), **156**, 557
Fibronectin
absence in glycoproteins synthesized by cultured cardiac valve endothelial cells (pig), **153**, 46
ED-A, expression in chondrocytes, reduction by dibutyryl cAMP (dog), **154**, 1088
fibroblast-secreted, binding affinities, alteration upon desulfation of tyrosine *O*-sulfate (rat), **154**, 1094
mediated cell adhesion, stimulation by phorbol esters (CHO cells), **155**, 603
Fibrosis
hepatic, effect on *in vitro* synthesis of free and small peptide-bound hydroxyproline (rat), **151**, 1128
Filaments
intermediate, associated proteins, alterations in renal proximal tubule epithelial cells *in vitro*, analysis (rat), **157**, 1316
paired helical, in brain of Alzheimer's disease patients, identification of modified form of microtubule-associated tau protein as main component, **154**, 660
Fish oil
effect on high- and low-density lipoproteins (rat plasma), **150**, 1063
fatty acids, ingested as triacylglycerols, free acids, and ethyl esters, comparative absorption (human), **152**, 328
triacylglycerols and ethyl esters, absorption of eicosapentaenoic and docosahexaenoic acids from, effect of

coingestion with high-fat meal (human), **156**, 960
Fixation
elastin, method for stress/strain characterization (bovine ligamentum nuchae), **151**, 686
Fla 365, *see* [2,6-Dichloro-4-dimethylaminophenyl]isopropylamine
Flavoprotein
electron-transferring, α-subunit cDNA, cloning and sequencing (rat liver), **155**, 300
Fluorescence
platelets from patients with occlusive arterial disease, analysis, **152**, 1410
Fluorescence microscopy
digital video, in single-cell studies of desensitization of receptors for platelet-derived growth factor, bradykinin, and ATP in Swiss 3T3 fibroblasts (mouse), **151**, 1205
Fluoride
activation of respiratory burst independently of Ca^{2+} changes, phosphoinositide turnover stimulation, and protein kinase C translocation in primed neutrophils (human), **150**, 955
and Al^{3+} ternary hydroxide complexes, detection in neutral solutions, **155**, 1194
in analysis of role of inositol phospholipid hydrolysis in opening of voltage-operated Ca^{2+} channels (guinea pig ileum), **153**, 14
effect on tubulin polymerization and associated guanosine triphosphate hydrolysis (bovine brain), **151**, 1025
induced platelet activation, inhibition by forskolin and prostacyclin (human), **156**, 1316
inhibition of agonist-induced inositol phosphate formation in cerebral cortex (rat), **155**, 664
stimulation of pepsinogen release from gastric chief cells, role of Ca^{2+} influx (guinea pig), **152**, 161
Fluoroaluminate species
effect on tubulin polymerization and associated guanosine triphosphate hydrolysis (bovine brain), **151**, 1025
6-[2-[(4-Fluorophenyl)phenylmethylene]-1-piperidinyl]ethyl-7-methyl-5*H*-thiazolo[3,2-a]pyrimidin-5-one, *see* R59 022
5′-*p*-Fluorosulfonylbenzoyladenosine
reaction with catalytic and AMP allosteric sites of microsomal 3-hydroxy-3-methylglutaryl-CoA reductase kinase (rat liver), **148**, 1009; *erratum*, **150**, 897
3′-Fluorothymidine
phosphorylation, anti-HIV activity, and cytotoxicity in human cell lines, **153**, 825
Fluroxene
potency, correlation with ^{19}F spin–spin relaxation times in brain and adipose tissues (rat), **151**, 1039
Follicle-stimulating hormone
effect on secretion of transforming growth factor β-like material by cultured immature Sertoli cells (pig), **154**, 1222
induced aromatase activity in cultured granulosa cells, effect of tumor necrosis factor (rat), **153**, 792
and luteinizing hormone, β-subunit mRNAs, colocalization by *in situ* hybridization with biotinylated probes (porcine anterior pituitary), **154**, 80
regional distribution in anterior pituitary, age-related changes (male rat), **152**, 1213
secretion from gonadotropin-releasing hormone-desensitized pituitary cells, stimulation by activin (rat), **151**, 1099
Follicle-stimulating hormone receptors
expression on cultured granulosa cells, induction by erythroid differentiation factor (rat), **156**, 668
Follistatin
gene, cloning and sequencing (pig), **152**, 717
Formaldehyde
formation from glycerol in hepatic microsomes (rat), **153**, 612
Formamide *N*-(2-hydroxy 3-methyl propane)
diastereomers, as statine models in quantum mechanical modeling of aspartic proteinase interactions, differential binding, **157**, 450
Formyl-methionyl-leucyl-phenylalanine
conjugates with murine monclonal antibodies, chemotactic activity for human monocytes, comparison, **155**, 1139
deactivation of platelet-activating factor-stimulated increase in intracellular calcium, role of protein kinase C (rabbit neutrophils), **151**, 836
induced [^{3}H]phosphatidic acid formation, effect of diacylglycerol kinase inhibitor R59 022 (human neutrophils), **153**, 1097
induced tyrosine phosphorylation of membrane-associated proteins (rabbit peritoneum), **151**, 794
preferred conformation, computer graphic determination, **157**, 569
stimulated superoxide generation in neutrophils, temperature-dependent inhibition by C-I and H-7 (human), **156**, 1376
Forskolin
daytime activation of cAMP production in cultured pineal gland, relationship to melatonin production (hamster), **157**, 930
inhibition of
atrial natriuretic factor secretion in noncontracting cultured atrial myocytes (rat), **157**, 330
fluoride-induced platelet activation and protein kinase C-dependent responses (human), **156**, 1316
stimulation of serotonin *N*-acetyltransferase and melatonin production in pineal gland during late dark period (hamster), **155**, 209
Fourier transform infrared spectroscopy
enkephalin solution and membrane structure, **150**, 245
single erythrocyte (human), **156**, 752
solvent-exposed NH groups of dynorphin A (1-13), **151**, 1220
triose-phosphate isomerase structure in aqueous solution (rabbit muscle), **152**, 69
weakly self-associating salt of guanylyl-(3′-5′)-guanosine, **151**, 86
Freeze–thawing
without detergent, in preparation of giant proteoliposomes: reconstitution of biomembranes usually inaccessible to patch-clamp pipette microelectrode (rabbit, rat), **154**, 85

Fructose
prevention of ATP depletion and toxicity induced by 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (rat hepatocytes), **153**, 734
Fructose-1,6-bisphosphatase
heterogenous photochemical and chloroplast-mediated activation, comparison (spinach), **152**, 668
inactivation by *o*-phthalaldehyde (rabbit liver), **150**, 1088
Fructose-2,6-bisphosphatase
–fructose-6-phosphate,2-kinase
encoding cDNA, cloning, sequence analysis, and expression (human liver), **153**, 328
isozymes in heart, liver, and skeletal muscle, analysis (bovine, rat), **157**, 949
Fructose 1,6-bisphosphate
allosteric regulation of L-lactate dehydrogenase, role of conserved histidine-188 residue (*Thermus caldophilus*), **152**, 1236
Fructose 2,6-bisphosphate
and α-glucose 1,6-bisphosphate, activation of muscle phosphofructokinase, differential effects of allosteric effectors and pH (rat), **157**, 664
rheumatoid cell levels, comparative effects of interleukin 1 and phorbol ester (human), **150**, 349
Fructose-bisphosphate aldolase
phosphate modification (*Escherichia coli*), **151**, 1033
Fructose 6-phosphate-1-kinase, *see* 6-Phosphofructokinase
Fructose-6-phosphate,2-kinase
–fructose-2,6-bisphosphatase
encoding cDNA, cloning, sequence analysis, and expression (human liver), **153**, 328
isozymes in heart, liver, and skeletal muscle, analysis (bovine, rat), **157**, 949
FSH, *see* Follicle-stimulating hormone
Fuchsin acid
selective inhibition of HIV replication *in vitro*, **155**, 1404
Fumarase, *see* Fumarate hydratase
Fumarate hydratase
amino acid sequence (porcine heart), **153**, 435
multiple forms, characterization (*Escherichia coli*), **153**, 1236
Fura-2
application as probe of elevated intracellular Ca^{2+} in platelets of Dahl-sensitive rats fed high-salt diet, **154**, 380
in measurement of calcium efflux through cardiac calcium channels reconstituted into liposomes (bovine), **154**, 1067

G

GABA, *see* γ-Aminobutyric acid
Gadolinium
binding to sarcoplasmic reticulum Ca^{2+}-ATPase, analysis by NMR: detection of four intermediate states, **155**, 236
Galactosamine
detection in insulin mediator stimulating pyruvate dehydrogenase phosphatase (rat liver), **151**, 1416
D-form, treated liver, partial purification and characterization of hepatocyte proliferation stimulatory factor (rat), **150**, 133
Galactose
–*N*-acetylgalactosamine, specific macrophage lectin, homology with hepatic asialoglycoprotein binding protein (rat), **155**, 720
α-Galactosidase
purification and structural analysis (*Escherichia coli*), **151**, 236
β-Galactosidase
cDNA, cloning, sequencing, and expression analysis (human), **157**, 238
site-directed mutagenic replacement of Glu-461 with Gln: role of Glu-461 in activity (*Escherichia coli*), **153**, 301
synthesis and early processing in normal and GM_1-gangliosidosis fibroblasts, comparison (human), **152**, 794
tyrosine-503, role in enzymatic activity, analysis by site-directed mutagenesis (*Escherichia coli*), **152**, 1050
β1,4-Galactosyltransferase
cDNA, comparison of two independent clones (mouse), **156**, 1223
full-length coding sequence, identification (human), **157**, 657
Gall formation
associated induction of 58-kDa protein (*Solidago altissima*), **152**, 1348
Gallopamil
reversal of chloroquine resistance in malaria (human), **155**, 476
Gangliosides
GD3, role in c-*myc*-induced transformation of 3Y1 cells (rat), **150**, 760
Gangliosidosis
GM_1, associated fibroblasts, β-galactosidase synthesis and early processing, analysis (human), **152**, 794
GM_2, B1 variant: wide geographic and ethnic distribution of β-hexosaminidase α-chain gene mutation identified in Puerto Rican patient, **156**, 1015
Gap junctions
cardiac, channeling activity, reconstitution into liposomes: gap junction functional assay (chicken), **154**, 194
Gastric acid
pentagastrin-stimulated secretion after pylorus ligation, inhibitory effect of neurotensin (rat), **152**, 231
Gastrin
effect on protein kinase C in cultured intestinal crypt cells (rat), **154**, 278
Gastrin-releasing peptide
solution conformation, analysis by two-dimensional ^1H NMR, **150**, 552
Gaucher's disease
hepatic glucosylceramide levels in murine model, normalization by phosphatidylserine injection, **152**, 155
GDP (guanosine 5′-diphosphate)
–Mg^{2+} complex, c-Ha-*ras* oncogene product p21, ^1H NMR study, **150**, 444

Gelatin
binding by fibroblast-secreted fibronectin, effect of tyrosine *O*-sulfate desulfation (rat), **154**, 1094
Gelatinase
in metastatic cell lines of colonic carcinoma, detection and characterization (mouse), **151**, 158
Gel electrophoresis
polyacrylamide, in demonstration of cytochrome-*c* oxidase monodispersity (bovine heart, *Paracoccus denitrificans*), **151**, 623
Gels
affinity, for purification of retinoid-specific binding protein, preparation (human), **155**, 503
Gelsolin
effects on actomyosin system in platelets (pig), **155**, 91
Genes
N-acetylglucosaminyl-1-phosphate transferase, amplification in tunicamycin-resistant CHO cells, **156**, 1063
β_2-adrenergic receptor, glucocorticoid response elements in 5′-noncoding region, requirement for glucocorticoid regulation of receptor mRNA levels (hamster), **154**, 676
albumin and IgE, methylation by *N*-nitrosodimethylamine, comparison (rat liver), **155**, 14
aldose reductase, characterization (rat), **153**, 1051
amyloid β-protein
Alzheimer's disease-associated, fine mapping (human), **151**, 1
duplication in Alzheimer's disease, analysis by polymorphic restriction fragments (human), **150**, 75
α1-antitrypsin-like, localized 12 kb downstream of genuine α1-antitrypsin gene, cloning and characterization (human), **155**, 634
APOC1, promoter region, localization of familial dysbetalipoproteinemia-associated HpaI restriction site (human), **152**, 1282
apolipoprotein A-I and A-IV, transcription, effect of triiodothyronine (rat liver), **154**, 997
apolipoprotein C-II, structural variant associated with ApoC-II deficiency, identification (human), **154**, 73
ATP synthase β and ϵ subunit, sequence analysis (*Bacillus megaterium*), **151**, 926
atrial natriuretic factor, expression by pneumocytes from neonatal lung, analysis (rat), **156**, 619
c-*abl*, hypermethylation, detection in spleen (juvenile rat), **154**, 1061
calmodulin, expression, early abnormal development in dystrophic muscle, correlation with reduced activity of resistant Ca^{2+}-ATPase (chicken), **151**, 1434
catalase, expression in acatalasia fibroblasts, analysis (human), **153**, 59
c-*erb* A, *n*-butyrate-induced expression in fibroblasts (human colon), **150**, 259
c-*fms*, expression in carcinoma cell lines (human), **157**, 395
c-*fos*
angiotensin II-induced expression in cultured vascular smooth muscle cells, role of protein kinase C activation and Ca^{2+} mobilization (rat), **150**, 52
down-regulation during estrogen-induced proliferation of oviduct (chicken), **150**, 82
expression in PC12 cells, effect of N-*ras* gene transfection, **150**, 1185
induction by transforming growth factor α (murine C3H 10T1/2 fibroblasts), **152**, 216
insulin-like growth factor I-induced expression in FRTL5 cells, role of promoter activation (rat thyroid), **151**, 1194
interleukin-1-induced expression in cultured umbilical vein endothelial cells (human), **152**, 1104
morphine-activated expression in brain (rat), **157**, 698
mRNA accumulation level, role in cell proliferation renewal (mouse), **153**, 1090
rapid and transient induction by glycine (rat liver), **152**, 252
transforming growth factor β-induced expression in EL2 and NIH-3T3 fibroblasts, comparison (mouse, rat), **151**, 298
c-Ha-*ras*
p21 product
GDP–Mg^{2+} complex, ^{1}H NMR study, **150**, 444
inhibition of cathepsin L-induced degradation of epidermal growth factor receptors (human A431 cells), **151**, 78
rapid and transient induction by glycine (rat liver), **152**, 252
c-H-*ras*, induced transformation of embryonic fibroblasts, inhibition by cotransfected polynucleotides with alternating purine–pyrimidine sequences (rat), **152**, 449
c-*mos*, expression in undifferentiated teratocarcinoma cells, changes in response to phorbol ester (mouse), **154**, 339
c-*myc*
corresponding mRNA, decrease in HL-60 cells, synergistic induction by 1,25-dihydroxyvitamin D_3 and tumor necrosis factor α, **152**, 1151
down-regulation during estrogen-induced proliferation of oviduct (chicken), **150**, 82
elevated expression in progeria fibroblasts (human), **155**, 996
expression in PC12 cells, effect of N-*ras* gene transfection, **150**, 1185
induction by transforming growth factor α (murine C3H 10T1/2 fibroblasts), **152**, 216
novobiocin- and butyrate-induced alteration in hepatocytes (human), **155**, 305
rapid and transient induction by glycine (rat liver), **152**, 252
regulation during HL-60 differentiation, role of transcription interruption (human), **151**, 574
regulatory regions, hybridization to nuclear 7 S RNAs (HeLa cells), **152**, 753
repression by transforming growth factor β (human colon carcinoma), **150**, 711
stably transfected hybrid, regulation in NIH3T3 cells, effects of serum, **157**, 379
transformation of fibroblasts, role of GD3 ganglioside (rat), **150**, 760
transient activation in Leydig cells by human chorionic gonadotropin (rat), **157**, 121

colony-stimulating factor 1, expression in carcinoma cell lines (human), **157**, 395
conferring nosiheptide resistance, molecular cloning (*Streptomyces actuosus*), **156**, 517
c-*raf*-1, encoded proteins, expression in *Escherichia coli* (human), **152**, 1045
c-*ras*, high-level expression in NIH-3T3 cells, associated decrease in platelet-derived growth factor-stimulated phospholipase activity, **150**, 937
C-reactive protein, structural analysis (mouse), **156**, 814
cytochrome P450, transcription elongation, regulation by heme (rat liver), **151**, 737; *erratum*, **152**, 1511
cytochrome $P450_{ALC}$, form 3a, isolation and partial characterization (rabbit), **150**, 10
cytochrome P450(b+e), phenobarbitone-induced expression, age effects (rat), **157**, 1403
D18S6 locus on chromosome 18, allele loss in colorectal carcinomas (human), **155**, 463
EJ2-*ras*, transfection, effect on polyamine biosynthesis and transport (Rat-1 fibroblasts), **157**, 264
elastase, cloning and characterization (*Pseudomonas aeruginosa*), **152**, 1117
erb-B, down-regulation during estrogen-induced proliferation of oviduct (chicken), **150**, 82
erythroid differentiation factor, expression in CHO cells, **151**, 230
estrogen-responsive, encoding of epidermal growth factor-like immunoreactive factor in MCF-7 breast cancer cells (human), **155**, 366
follistatin, cloning and sequencing (pig), **152**, 717
*fts*A and *lac*Z, encoded fusion proteins, localization in inner–outer membrane junctions (*Escherichia coli*), **152**, 1023
Gγ-globin with T or C at position -158, expression in COS and MEL cells (human), **155**, 1213
ggt, cloning and isolation of encoded γ-glutamyltranspeptidase (*Escherichia coli* K-12), **150**, 33
globin, α-, βmajor-, and βminor-form, expression regulation, analysis (mouse), **150**, 204
glucocorticoid receptor, on chromosome 5, allele loss in colorectal carcinomas (human), **150**, 591
glutathione peroxidase, expression in acatalasia fibroblasts, analysis (human), **153**, 59
glycoprotein Ib α-chain, isolation and sequencing (human platelets), **156**, 389
glycoprotein IIb, platelet membrane, isolation and characterization of 5′ flanking region (human), **156**, 595
growth hormone, expression in transfected CV-1 cells (rat), **156**, 1166
H-2D and H-2K, expression by PYS-2 teratocarcinoma cells (mouse), **157**, 648
heat-shock protein hsp 70, transcription in peripheral blood mononuclear cells, age-related changes (human), **157**, 580
heme oxygenase, expression in liver, developmental analysis (human, rat), **150**, 717
β-hexosaminidase α-chain
  in Ashkenazi Jewish patients with Tay-Sachs disease, abnormal associated mRNA from splicing defect due to exon–intron junctional mutation, **153**, 463
  mutation identified in Puerto Rican patient with GM_2 gangliosidosis B1 variant, wide geographic and ethnic distribution, **156**, 1015
homeobox
  homologous to murine *Hox-2.1* and *En-2*, *in situ* hybridization patterns (zebrafish), **157**, 426
  Hox-4.1, deletion in myeloid leukemias with deletion in chromosome 2 (mouse), **156**, 1265
hprt, cDNA specific cloning and sequencing for mutation analysis, methodology (human), **151**, 487
H-*ras*, transformed 3T3 cells, enhanced expression of 2ar/osteopontin phosphoproteins (mouse, rat), **157**, 166
hst, cloned from normal leukocyte DNA, transformation of NIH3T3 cells (human), **151**, 965
Hst1 and *Int-2*, clustered homologous oncogenic, differential expression during F9 cell differentiation (mouse), **157**, 618
HST1
  and *INT2*, homologous oncogenic, close proximity in human genome, **157**, 828
  oncogenic, expression in human germ cell tumors, **155**, 1324; *erratum*, **157**, 850
human interferon γ, expression in *Escherichia coli*, modulation by site-directed mutagenesis, **151**, 598
hyg, 5′ region, promoter activity, analysis (*Streptomyces hygroscopicus*), **151**, 270
Ia-associated invariant chain, in chronic lymphocytic leukemia cells, detection of multiple transcription initiation sites (human), **152**, 184
immunoglobulin heavy-chain locus, physical linkage of variable-region and joining-region segments (human), **154**, 265
insulin-like growth factor-binding protein IBP-1, structural organization (human), **157**, 898
insulin-regulated, selective transcription in hepatoma cell nuclear extracts (rat), **153**, 116
interferon β1, human, cloned in episomal eucaryotic vector, constitutive and inducible expression (HeLa cells), **157**, 1175
interferon-induced, downregulating DNA sequence, mapping (human), **156**, 701
interferon, transcription *in vitro*, modulation by positive and negative cellular factors (human), **154**, 1338
interleukin 1, expression in acute monocytic leukemia line THP-1, post-transcriptional control (human), **156**, 830
interleukin 1β
  induction by interleukin 1α and 1β in dermal fibroblasts (human), **156**, 1209
  site-specific mutagenesis: structure–function analysis of cysteine residues (human), **150**, 1106
  transcription, induction by phorbol ester and inhibition by dexamethasone (U937 cells), **156**, 269
KEX2, encoding of endopeptidase homologous to subtilisin-like serine proteases (yeast), **156**, 246
lignin peroxidase, structure and regulation (*Phanerochaete chrysosporium*), **155**, 626; *erratum*, **157**, 417
low-density-lipoprotein receptor, upstream promoter, absence of cAMP response element (human), **152**, 143
*lux*F, encoded protein, homology with luciferase subunits

(*Photobacterium phosphoreum*), **155**, 351
maltohexaose-producing amylase, from alkalophilic *Bacillus* sp. #707, nucleotide sequence and structural similarity to liquefying-type α-amylases, **151**, 25
metalloproteinase inhibitor, cloning and expression (*Streptomyces nigrescens*), **155**, 487; *erratum*, **156**, 1419
metallothionein, mammalian, seed-transmissable expression in transgenic tobacco, **150**, 640
metallothionein 1, cloning, nucleotide sequence, and characterization (rabbit), **153**, 209
metallothionein 2 pseudogene, cloning, nucleotide sequence, and molecular evolution (rabbit), **156**, 1403
MK1, expressed in embryonal carcinoma cells and during embryogenesis, cDNA cloning and sequence analysis (mouse), **151**, 1312
neutrophil chemotactic factor, monokine-induced expression in endothelial cells (human), **156**, 1340
N-*myc*, transfection, effect on polyamine biosynthesis and transport (Rat-1 fibroblasts), **157**, 264
N-*ras*, transfection of PC12 cells, effects on cell morphology and c-*fos*, c-*myc*, and ornithine decarboxylase expression, **150**, 1185
oncogenic, transformation of fibroblasts, induction of sialosylparagloboside neosynthesis, **150**, 766
ornithine decarboxylase, ribonucleotide reductase M2 component, and P5-8, coamplification, relationship to hydroxyurea resistance reversion (CHO cells), **154**, 975; *erratum*, **156**, 1419
parathyroid hormone-like peptide, assignment to chromosome 2 (rat), **157**, 558
pepsinogen
  cell-specific hypomethylation in pepsinogen-producing cells (guinea pig stomach), **155**, 670
  isolation and structural analysis (chicken embryo), **152**, 776
pepsinogen A, expression in gastric fundic mucosa, role of hypomethylation (human), **151**, 275
P5-8, ribonucleotide reductase M2 component, and ornithine decarboxylase, coamplification, relationship to hydroxyurea resistance reversion (CHO cells), **154**, 975; *erratum*, **156**, 1419
P-glycoprotein, expression induction in multidrug-resistant leukemia cell line (human), **155**, 754
plasminogen activator inhibitor 2, promoter region, isolation and characterization (human), **156**, 383
poly(ADP-ribose) polymerase, induction in lectin-stimulated T lymphocytes, role of protein synthesis (human), **156**, 995; *erratum*, **157**, 1445
pregnancy-specific β_1-glycoprotein
  and carcinoembryonic antigen-related proteins, relationship (human), **154**, 130
  exon–intron organization: implications for repetitive domains and C-terminal sequences (human), **156**, 68
proα2(I)collagen, nuclear matrix-associated region, location and methylation pattern (human fibroblasts, leukocytes), **157**, 500
proenkephalin precursor, expression in postmeiotic germ cells (rat testis), **151**, 664
pro-opiomelanocortin, expression in pheochromocytomas using upstream transcription initiation sites (human), **155**, 895
protease VII, cloning (*Escherichia coli*), **153**, 753
protein S, cloning and nucleotide sequence: identification of PSα gene as site of liver protein S mRNA synthesis (human), **157**, 1033
proto-*ret*, mRNA expression in adult and embryonic tissues (rat), **153**, 1290
pS2, 5′ flanking region, mediation of transcription activation by estrogen (human MCF-7 cells), **151**, 306
ras
  induction of 92-kDa metalloproteinase in transfected NIH/3T3 and human tumor cell lines: association with malignant phenotype, **154**, 832
  products, platelet M_r 22,000 GTP-binding protein *smg* p21 with same effector domain, phosphorylation by cAMP-dependent protein kinase (human), **157**, 851
  transformed cells, decreased diacylglycerol kinase translocation (mouse), **154**, 959
renin, associated restriction fragment length polymorphism, allele frequency in hypertensives (human), **150**, 219
ribonucleotide reductase M2 component, ornithine decarboxylase, and P5-8, coamplification, relationship to hydroxyurea resistance reversion (CHO cells), **154**, 975; *erratum*, **156**, 1419
rig, insulinoma-derived, expression during liver regeneration and in primary hepatocyte cultures (rat), **150**, 1302
sarcotoxin IA, role in development (*Sarcophaga peregrina*), **150**, 540
serum amyloid P component, isolation and characterization (mouse), **155**, 1366
simian virus 40, regulatory regions, hybridization to nuclear 7 S RNAs (3T3 cells), **152**, 753
SIS, encoding platelet-derived growth factor-2 β-chain, structural alterations in mesenchymal tumors: reduction to homozygosity (human), **155**, 692
superoxide dismutase, expression in acatalasia fibroblasts, analysis (human), **153**, 59
synthetic, containing low-frequency codons, encoding insulin-like growth factor I, overexpression in *Escherichia coli*, associated mistranslation of IGF-I, **155**, 518
T-cell receptor
  α, β, and γ rearrangements, relationship to Jα region involved in c-*myc*/Jα translocation (human lymphoma), **154**, 550
  β chain loci, D_β–J_β rearrangement in T-cell leukemia patient, analysis: excision of intervening sequence as linear molecule, **152**, 257
terminal deoxynucleotidyltransferase, isolation of putative promoter region (human), **154**, 91
T4-lysozyme, mutation affecting active site residues, effect on lytic activity, **153**, 862
transthyretin, from Israeli patient with familial amyloidotic polyneuropathy, confirmation of position 33 mutation by restriction fragment analysis, **153**, 198
tryptophan synthase α subunit, site-directed mutagenesis:

preparation and characterization of mutant proteins, **151**, 672
tyrosinase
in amelanotic mutant mice, expression analysis, **155**, 470
in melanoma cells, melanotropin effects on expression (mouse), **153**, 1301
tyrosine hydroxylase, characterization: functional expression of promoters in rodent neuronal and nonneuronal cells (human, rat), **157**, 1341
ubiquitin-activating enzyme, localization on X chromosome (tsBN75 cells), **153**, 1173
uncoupling protein, complete sequence, primary transcript structure, and exon evolutionary relationships (rat liver), **157**, 783
uteroglobin, promoter, progesterone-dependent binding of *trans*-acting factor, analysis (rabbit), **156**, 1368
[Val 12]Ha-*ras*, transformed NIH 3T3 cells, growth, effect of genistein, **157**, 183
v-Ha-*ras*, transformed metastatic NIH 3T3 cells, suppression of tropomyosin isoform 2 synthesis (mouse), **157**, 1111
v-Ki-*ras*, transformed NIH/3T3 fibroblasts, in analysis of GTP-binding protein effect on adenylate cyclase activity, **153**, 1214
von Willebrand factor, identification of repetitive Alu sequences 5′ to transcription initiation site (human), **153**, 1159
v-*ras*, expression in thyroid epithelial cells, associated increase in protein kinase C activity (rat), **157**, 1093
v-*rel*, encoded product and complexed pp40 protein, serine phosphorylation (avian reticuloendotheliosis virus-transformed lymphoid cells), **152**, 441
Genistein
effects on topoisomerase activity and growth of [Val 12]Ha-*ras*-transformed NIH 3T3 cells, **157**, 183
Genotyping
apolipoprotein E, application of polymerase chain reaction and allele-specific oligonucleotide probes (human blood), **157**, 1212
Geranyl*trans*transferase
in prenyltransferase reaction, different roles of diphosphate moieties of allylic and homoallylic diphosphates, **156**, 396
Germination
seeds, relationship to polyamine distribution in embryonic tissues (corn), **153**, 881
spores, associated ATP production, role of glucose metabolism via Embden–Meyerhof pathway, analysis with mutant lacking hexokinase (*Bacillus megaterium*), **151**, 48
Globins
α, βmajor, and βminor, gene expression regulation, analysis (mouse), **150**, 204
β, pre-mRNA
5′ splice site cleavage activity, restoration by reconstituted U1 small nuclear ribonucleoprotein complex (HeLa cells), **154**, 1010
5′ and 3′ splice sites, differential enzymatic accessibilities in splicing-competent HeLa cell nuclear extract, **150**, 517
Gγ, genes with T or C at position -158, expression in COS and MEL cells (human), **155**, 1213
Globotriosyl ceramide
specific recognition by *Escherichia coli* verotoxin 2, **152**, 674
Globulin
corticosteroid-binding, induction of adenylate cyclase in mammary carcinoma cells (human), **153**, 1012
Glomerulonephritis
experimental model, associated proteinurea, reduction by cysteine proteinase inhibitor E-64 (rat), **155**, 1318
Glomerulosa cells
inositol 1,3,4,6-tetrakisphosphate metabolism to inositol pentakisphosphate (bovine), **157**, 1247
phosphatidylinositol–glycan turnover, stimulation by adrenocorticotropin (bovine), **157**, 585
protein kinase C subcellular distribution (rat), **156**, 628
Glucagon
effect on
insulin secretion from perifused purified beta cells (rat pancreas), **151**, 948
placenta, analysis (human), **151**, 1019
and guanine nucleotides, regulation of direct interaction between membrane-associated nucleoside-diphosphate kinase and stimulatory GTP-binding proteins (rat liver), **151**, 248
induction of
cytosolic aspartate aminotransferase in primary cultured hepatocytes (rat), **153**, 410
tyrosine aminotransferase in cultured cardiac cells, role of endogenous polyamines (chicken embryo), **152**, 497
peptide 1–21, trophic effects on isolated ileal mucosal cells (rat), **152**, 1038
and vasopressin, induced Ca^{2+} influx in liver, inhibition by exposure to depolarizing concentrations of K^+ (rat), **153**, 1282
Glucocorticoid receptors
activated complexes, tight binding to histone–agarose (rat liver), **151**, 763
binding to DNA–cellulose, effect of 90-kDa heat shock protein HSP90 (human lymphoblastoid cells), **151**, 1226
gene locus on chromosome 5, allele loss in colorectal carcinomas (human), **150**, 591
high-molecular-weight form containing 90-kDa nonsteroid-binding protein, stabilization by RU 486 (rat thymus), **150**, 1221
renal, interaction with antiglucocorticoid RU 486 and dexamethasone, comparison (rat), **153**, 365
structural kinship with hsp90-associated dioxin receptor (rat liver), **155**, 801
Glucocorticoids
regulation of β_2-adrenergic receptor mRNA levels, requirement of glucocorticoid response elements in receptor gene 5′-noncoding region (hamster), **154**, 676
Glucosamine-6-sulfatase
cDNA, homology with steroid sulfatase (human), **157**, 218

Glucose
catalysis of vesicle membrane lipid peroxidation, **151**, 649
cerebral uptake *in vivo*, measurement by ^{31}P NMR (rat), **157**, 1258
D-form, and L-leucine, Na^+-dependent concentrative uptake in brush border membrane vesicles formed from duodenal biopsies (human), **156**, 164
dual effect on cytoplasmic free Ca^{2+} levels and insulin release, relationship to beta cell fuel deprivation (mouse), **153**, 984
effect on cytoplasmic Ca^{2+} levels in pancreatic B cells (mouse), **150**, 419
induced electrical activity in pancreatic B cells, role of ATP-sensitive K^+ channels in regulation (mouse), **156**, 769
induction of cytoplasmic Ca^{2+} oscillations in pancreatic B cells (mouse), **151**, 1299
and insulin, modulation of adipocyte protein kinase C (rat), **156**, 570
metabolism
effect of phorbol ester, relationship to insulin action (rat adipocytes), **154**, 171
via Embden–Meyerhof pathway, role in ATP production during spore germination, analysis with mutant lacking hexokinase (*Bacillus megaterium*), **151**, 48
parallel effects of insulin-like growth factor II and insulin (murine embryonic limb buds), **152**, 359
output in perfused liver, leukotriene-induced increase (rat), **151**, 283
transport
by brush border membranes, effects of various forms of vitamin D (rat kidney), **150**, 1193
in L6 muscle cells, stimulatory mechanism: insulin-mediated translocation of glucose transporters, **157**, 1329
utilization, and lipid synthesis, pathways in lactating mammary gland *in vitro*, comparative effects of insulin and proinsulin (rat), **154**, 443
α-Glucose 1,6-bisphosphate
and fructose 2,6-bisphosphate, activation of muscle phosphofructokinase, differential effects of allosteric effectors and pH (rat), **157**, 664
Glucose dehydrogenase
role in ATP production during spore germination: analysis with mutant lacking hexokinase (*Bacillus megaterium*), **151**, 48
Glucose-6-phosphatase
induction by dexamethasone *in vitro*, effect of insulin (2S FAZA hepatoma cells), **153**, 307
Glucose-6-phosphate dehydrogenase
in distal convoluted tubules in cytochemical bioassay, effect of human parathyroid hormone-related protein fragment 1–34 (guinea pig kidney), **154**, 146
Glucose-6-phosphohydrolase, *see* Glucose-6-phosphatase
Glucose transporters
activity in astrocytes, effects of 3,5,3′-triiodothyronine (rat brain), **156**, 275
from brain synaptosomes, characterization (rat), **155**, 685
hepatic, ontogeny (rabbit), **155**, 173
insulin-mediated translocation from intracellular membranes to plasma membranes: sole mechanism of glucose transport stimulation in L6 muscle cells, **157**, 1329
mRNA alteration during tissue development, analysis with cloned cDNA (rat), **154**, 1204
Glucose/xylose isomerase, *see* Xylose isomerase
α-Glucosidase
membrane-bound, purification and characterization after solubilization by proteolysis (human placenta), **151**, 1358
Glucosylceramidase
activator protein carbohydrate moiety, analysis (guinea pig liver), **154**, 1197
Glucosylceramide
hepatic levels in Gaucher disease model, normalization by phosphatidylserine injection (mouse), **152**, 155
Glucosylceramide β-glucosidase, *see* Glucosylceramidase
Glucosyltransferase
purification and characterization: production of oligoisomaltosaccharides (*Streptococcus mutans*), **150**, 687
β-Glucuronidase
ischemia-induced leakage from lysosomes, effects of sodium channel blocker SUN 1165 (canine heart), **157**, 433
and UDPglucuronosyltransferases, differential responses to disulfiram and related compounds (murine liver), **153**, 149
Glucuronosyltransferase
bilirubin-specific, microsomal activator, isolation from hepatic microsomes (normal, jaundiced Gunn rats), **154**, 1212
hepatic and pulmonary, and β-glucuronidase, differential responses to disulfiram and related compounds (mouse), **153**, 149
Glutamate
^3H-labeled, *N*-methyl-D-aspartic acid-sensitive binding sites in brain synaptic membranes, disclosure by Triton X-100, **153**, 510
modulation of DNA topoisomerase II-mediated reactions in potassium-containing solutions, **152**, 808
uptake by cell envelope vesicles, analysis (*Halobacterium halobium*), **152**, 1090
Glutamate–ammonia ligase
regulation, role of phosphorylation and adenylylation (*Mycobacterium phlei*), **155**, 1133
Glutamate dehydrogenase
precursor, cDNA, cloning and sequence analysis (human liver), **152**, 1395
Glutamate synthase (ferredoxin)
occurrence and properties in plant cell fraction during root nodule development (*Medicago sativa*), **156**, 1130
Glutamic acid
residue 46 of ribonuclease T_1, role in guanine base recognition, **150**, 68
residue 461 of β-galactosidase, site-directed mutagenic replacement with Gln: role of Glu-461 in enzyme activity (*Escherichia coli*), **153**, 301
Glutamine
in position 11 of human β-endorphin, identification as acyl

donor site during transglutaminase-mediated modification, **154**, 735
site-directed mutagenic replacement of Glu-461 in β-galactosidase, role of Glu-461 in enzyme activity (*Escherichia coli*), **153**, 301
Glutamine amidotransferase
and carbamyl phosphate synthetase, associated domains of mammalian CAD protein, identification of intervening junction, **154**, 1047
Glutamine synthetase, *see* Glutamate–ammonia ligase
γ-Glutamyltransferase
induction by all-*trans*-retinoic acid in epithelial cells *in vitro* (rat liver), **157**, 1039
isolation from overproducing strain of *Escherichia coli* K-12, **150**, 33
S-oxalylglutathione identification as substrate, implications for enzyme role in cell proliferation, **150**, 828
translation and processing *in vitro* (human hepatoma cells), **154**, 1167
γ-Glutamyl transpeptidase, *see* γ-Glutamyltransferase
Glutaraldehyde
erythrocytes crosslinked with, general properties and significance as blood substitute (human), **156**, 970
Glutathione
attenuation of porphyrinogen oxidation *in vitro*, reversal by porphyrinogenic trace metals, **152**, 1428
–2-bromohydroquinone conjugates, isomeric, differential uptake into kidney slices (rat), **152**, 223
colonic levels, endotoxin effects (rat), **151**, 844
identification as inhibitor of calmodulin-stimulated protein methylation in hepatic cytosol *in vitro* (rat), **156**, 368
levels in purified renal nuclei after buthionine sulfoximine administration (rat), **155**, 956
reduction of chromate, mechanism: ESR evidence for role of glutathionyl radical and isolable Cr(V) intermediate, **156**, 137
role in transmembrane electron transport (*Cuscuta* protoplasts), **156**, 940
Glutathione peroxidase
cDNA nucleotide sequence and diminished mRNA expression in selenium-deficient liver (rat), **154**, 1024
gene expression, analysis in acatalasia fibroblasts (human), **153**, 59
mRNA, hepatic levels, effect of selenium status (rat), **153**, 855
Glutathione *S*-transferase
identification as substrate of calmodulin-stimulated protein methylation in hepatic cytosol *in vitro* (rat), **156**, 368
Glutathionyl radical
role in chromate reduction by glutathione, ESR evidence, **156**, 137
Glycan
–phosphatidylinositol, turnover in glomerulosa cells, stimulation by adrenocorticotropin (bovine), **157**, 585
Glycation
alcohol dehydrogenase, *in vivo* evidence (equine liver), **152**, 711
nonenzymatic, apolipoprotein A-I, effects on self-association and lipid-binding properties (human), **153**, 1060
Glyceraldehyde-3-phosphate dehydrogenase
reduction by lipoamide-reduced thioredoxin fragment 31–36 (yeast), **150**, 156
Glycerate-3-phosphate
light and dark transients: role in noncyclic photoreductive carbon fixation in photosynthesis, **150**, 399
Glycerol
oxidation to formaldehyde by hepatic microsomes (rat), **153**, 612
Glycine
induction of rapid and transient expression of c-*fos*, c-*myc*, and c-Ha-*ras* genes (rat liver), **152**, 252
isoaccepting tRNA and codon for, distribution in collagenous and noncollagenous tissue (chicken), **150**, 148
sequence rich in, conserved in nuclear RNA-binding proteins, detection in B-36 nucleolar protein (*Physarum polycephalum*), **155**, 1278
transport by cultured fibroblasts, analysis (human), **152**, 617
Glycine decarboxylase, *see* Glycine dehydrogenase (decarboxylating)
Glycine dehydrogenase (decarboxylating)
impaired expression in hyperglycinemia patients, **154**, 292
Glycogenolysis
induction in perfused liver by platelet-activating factor, mediation by prostaglandin D_2 from Kupffer cells (rat), **157**, 1288
Glycogen synthase
phosphorylation by
bovine thymic protein-tyrosine kinase (rabbit muscle), **155**, 52
casein kinase I, effect of spermine (rabbit muscle), **156**, 653
Glycolipids
Le^b and Y, biosynthetic pathways in gastric carcinoma cell line KATO III, analysis by chromatogram-binding assay, **151**, 100
Glycopeptides
oligomannose-type, and concanavalin A, formation of homogeneous crosslinked lattices, **152**, 1076
vasopressin-neurophysin precursor-associated, identification as neurohypophysial prolactin-releasing factor (rat), **151**, 524
β_1-Glycoprotein
pregnancy-specific
encoding gene, exon–intron organization: implications for repetitive domains and C-terminal sequences (human), **156**, 68
primary structure, relationship to carcinoembryonic antigen-related proteins (human), **154**, 130
sequence homology with carcinoembryonic antigen (human), **152**, 762
Glycoproteins
cell-surface
83-kDa, on *Trypanosoma cruzi* trypomastigotes, binding to rat cardiac myoblasts, **155**, 256
regulation of plasma membrane NADH ascorbate free radical reductase (rat liver), **154**, 1029
deaminated neuraminic acid-rich, isolation from egg vitelline envelope (rainbow trout), **153**, 172
glucosylceramide β-glucosidase-activating, analysis of car-

bohydrate moiety (guinea pig liver), **154**, 1197
HIV envelope-associated, human monoclonal antibodies to, production and characterization *in vitro*, **155**, 1105
leukocyte adhesion, localization in tertiary granules of neutrophils (human), **154**, 641
membrane-associated, 130-kDa, with properties of heparin-binding growth factor receptor, purification (human hepatoma cells), **157**, 1007
microfibril-associated, reactive monoclonal antibody, generation and characterization (bovine ocular zonule), **151**, 822
IX, isolation and characterization (human platelets), **156**, 931
Ib, α-chain, encoding gene, isolation and sequencing (human platelets), **156**, 389
P-
encoding gene, expression induction in multidrug-resistant leukemia cell line (human), **155**, 754
labeling by vinblastine photoaffinity analog, effects of indole alkaloids (human leukemic cells), **153**, 959
from pancreatic juice, characterization: 35-kDa truncated protease E and 19-kDa protein X precursor (human), **156**, 318
sulfated SGP-2, homology with clusterin from primary Sertoli cell-enriched culture medium (rat), **155**, 398
sulfation, inhibition by substrates of sulfation and sulfate analogs (HepG2 cells), **150**, 342
synthesis by cultured cardiac valve endothelial cells: lack of fibronectin production (pig), **153**, 46
IIb, platelet membrane, encoding gene, isolation and characterization of 5′ flanking region (human), **156**, 595
variant surface, solubilization by acid lipase (human serum), **150**, 476

Glycosaminoglycans
synthesis by cartilage *in vitro*, inhibition by interleukin 1 (pig), **154**, 421

Glycosylation
heterogeneous, arylphorin (*Musca domestica*), **151**, 1004
nonenzymatic, lens crystallins, prevention by aspirin (human eye), **151**, 991
post-translational, epidermal growth factor receptor, independence from acquisition of tyrosine kinase autophosphorylation activity (human A431 cells), **153**, 96
trans-, enzymatic, in synthesis of 2′,3′-dideoxynucleosides (*Lactobacillus helveticus*), **155**, 829

Glycosylinositol phospholipid
membrane anchor for acetylcholinesterase, detection of alkylacylglycerol molecular species (bovine erythrocytes), **150**, 271

Glycotripeptides
exogenous, unregulated secretion (hamster insulinoma cells, rat islets), **156**, 457

Glycyrrhizic acid
inhibition of polypeptide phosphorylation by polypeptide-dependent protein kinase *in vitro* (HeLa S3 cells), **157**, 597

Glycyrrhizin, *see* Glycyrrhizic acid

Gold sodium thiomalate
inhibition of macrophage-derived angiogenic activity in rat corneal bioassay (mouse), **154**, 205

Gonadotropin
human chorionic, *see* Human chorionic gonadotropin

Gonadotropin-releasing hormone, *see* Luteinizing hormone-releasing hormone

Gramine
role in adenylate cyclase regulation (*Paracentrotus lividus*, *Sphaerechinus granularis*), **154**, 758

Granulocytes
neutrophilic, granulocytic fraction, isolation and characterization of protein proteinase isoinhibitors (horse), **154**, 1107
–platelet suspensions, transcellular conversion of endogenous arachidonic acid to lipoxins (human), **157**, 801

Granulosa cells
aromatase activity *in vitro*, FSH-induced, effect of tumor necrosis factor (rat), **153**, 792
differentiation *in vitro*, inhibition by interferon γ (rat), **157**, 891
distinct potassium channels, characterization (chicken), **155**, 761
follicle-stimulating hormone receptor expression *in vitro*, induction by erythroid differentiation factor (rat), **156**, 668
follicular, functions, modulation by erythroid differentiation factor (rat), **153**, 281
luteinizing hormone receptor expression *in vitro*, regulation by fibroblast growth factor (rat), **156**, 634

Graphite
edge-oriented pyrolytic, electron transfer reaction of cytochrome c_{552}, analysis (*Euglena gracilis*), **157**, 1021

Growth cones
in PC12 cells, localization of $pp60^{c\text{-}src}$ (rat), **157**, 1383

Growth factors, *see also specific growth factors*
analysis in renal cell carcinoma (human), **153**, 818
Shope fibroma virus, epidermal growth factor-transforming growth factor activities in newborn mice, **154**, 497
spleen-derived, promoting hepatocyte proliferation *in vitro*, identification (rat), **153**, 1123

Growth hormone, *see* Somatotropin

Growth hormone-releasing factor
hexapeptide, analog containing C-terminal thioamide group, solid-phase synthesis, **150**, 1017

Growth inhibitors
protein, partial purification from multicellular tumor spheroids (human, mouse), **152**, 463

GTP (guanosine 5′-triphosphate)
activated phospholipase C, inhibition by guanosine 5′-[β-thio]diphosphate: role of cell permeability (human platelets), **153**, 417
binding proteins
detection in cyanobacterium *Anabaena cylindrica*, **151**, 215
direct coupling to dihydropyridine binding sites (rat), **156**, 1279
effect on adenylate cyclase activity, analysis in v-Ki-*ras*-transformed NIH 3T3 fibroblasts, **153**, 1214

identification in plasma membranes of higher plants, **156**, 954
inhibitory, reconstitution of partially purified opioid receptors (rat brain), **156**, 54
M_r 22,000, identification as *smg*-21 gene product with same effector domain as *ras* gene products (human platelets), **157**, 670
multiple small-molecular-weight: purification and characterization of 24-kDa protein (bovine brain cytosol), **155**, 1284
regulation of CD3 antigen phosphorylation (human T lymphocytes), **156**, 328
smg p21, M_r 22,000, with same effector domain as *ras* gene products, phosphorylation by cAMP-dependent protein kinase (human platelets), **157**, 851
soluble, mediation of GTP-γ-S-stimulated phosphatidylinositol-4,5-bisphosphate hydrolysis by soluble phospholipase C from platelets (human), **154**, 351
stimulatory, and nucleoside-diphosphate kinase, membrane-associated: direct interaction, regulation by hormones and guanine nucleotides (rat liver), **151**, 248
binding to single site in myelin basic protein N-terminus (human brain), **152**, 1468; *erratum*, **153**, 1333
hydrolysis, and associated tubulin polymerization, effects of aluminum ion, fluoride, and fluoroaluminate species (bovine brain), **151**, 1025
pools in yeast, control by cAMP, **150**, 1144; *erratum*, **153**, 487
specific binding by microsomal membranes, demonstration (*Cucurbita pepo* seedlings), **155**, 1478
GTPase
platelet membrane high-affinity, vasopressin-activated, properties (human), **154**, 213
GTP-γ-azidoanilide
in photoaffinity labeling of cholera toxin-sensitive 40-kDa protein from pancreatic acinar cells (rat), **155**, 1051
GTP-γ-S [guanosine 5′-*O*-(3-thiotriphosphate)]
augmentation of myofilament Ca^{2+} sensitivity in α-toxin-permeabilized arterial smooth muscle (rabbit), **157**, 677
induction of
GTP-binding protein G_o α subunit release from plasma membrane (NG108-15 cells), **152**, 243
inositol 1,4,5-trisphosphate-dependent and -independent Ca^{2+} release in vascular smooth muscle, heparin effects (rabbit), **153**, 625
platelet granule secretion, effect of phorbol ester (human), **156**, 1257
inhibition of Ca^{2+} pump in cardiac sarcolemmal vesicles (rat), **152**, 1111
stimulation of phosphatidylinositol-4,5-bisphosphate hydrolysis by soluble phospholipase C from platelets, mediation by GTP-binding protein (human), **154**, 351
Guaiacol
hydrogen peroxide-dependent oxidation, in analysis of hydroperoxidase activity of lipoxygenase, **155**, 1075
Guanidine hydrochloride
sedimentation equilibrium of titin polypeptides in, assessment (rabbit skeletal muscle), **150**, 1155
N-(2-Guanidinoethyl)-5-isoquinolinesulfonamide hydrochloride
effect on primary, secondary, and cloned cytotoxic T cells (mouse), **154**, 1280
Guanine
base recognition by ribonuclease T_1, role of enzyme Glu 46 residue, **150**, 68
Guanine nucleotide exchange factor
activity in skeletal muscle and heart, effects of diabetes (rat), **156**, 706
Guanine nucleotides
binding proteins
detection in
hepatic microsomes (rat), **150**, 848
hypocotyl microsomes (zucchini), **150**, 899
differential coupling of vasopressin V1 receptors from smooth muscle and liver (bovine, rat), **151**, 1293
Goα, cloning and DNA sequence analysis (human), **150**, 811; *erratum*, **153**, 487
role in cell-surface receptor coupling to breakdown of inositol-containing lipids during T-lymphocyte mitogenesis (human), **148**, 1223; *erratum*, **150**, 1315
effect on NADPH oxidase activation in cell-free system (bovine neutrophils), **152**, 993
entrapment, correlation to F_1-ATPase inhibition by IF_1 protein (porcine cardiac mitochondria), **152**, 1319
and glucagon, regulation of direct interaction between membrane-associated nucleoside-diphosphate kinase and stimulatory GTP-binding proteins (rat liver), **151**, 248
Guanosine
and anti-cancer agent Pt(IV)(cyclohexyldiamine)Cl_4, crystal structure of reaction product, **156**, 1120
Guanosine 5′-[β-thio]diphosphate
inhibition of agonist-activated phospholipase C, role of cell permeabilization (human platelets), **153**, 417
Guanylate cyclase
atrial natriuretic peptide receptor-coupled, characterization and regulation by protein kinase C (rat renal glomeruli), **157**, 755
Mg^{2+}-dependent, detection in cell-free preparations of *Dictyostelium discoideum*, **150**, 405
particulate, sensitivity to rat atrial natriuretic factor, enhancement by amiloride (bovine adrenal cortex), **152**, 1263
soluble, cDNA coding for 70-kDa subunit, molecular cloning (rat lung), **157**, 1139
Guanylyl-(3′-5′)-guanosine
weakly self-associating salt, preparation and characterization, **151**, 86

H

H-7, *see* 1-(5-Isoquinolinesulfonyl)-2-methylpiperazine
Halobacterium halobium
cell envelope vesicles, glutamate uptake analysis, **152**, 1090
intracellular pH, determination by 2′,7′-bis(carboxyethyl)-5(6)-carboxyfluorescein, **155**, 123
Halobacterium sp.
Australian strain, identification of proton-pumping retinal

protein archaerhodopsin, **151**, 1339
Haloethylnitrosourea
treated DNA, associated 7-alkylguanines, release by 3-methyladenine-DNA glycosylase II (*Escherichia coli*), **155**, 1261
Haloperidol
azido-, in immuno-photoaffinity labeling of D_2 dopamine receptors in striatal membranes (bovine), **155**, 930
Halothane
inhibition of calcium efflux from hepatic mitochondria (rat), **155**, 978
and other general anesthetics, effects on nerve impulse blockade and on proteinaceous target site, comparison (squid giant axon), **154**, 47
Haptoglobin
binding by oxyhemoglobin β chains, in analysis of β tetramer dissociation (human), **156**, 438
Heart
adriamycin-perfused, direct detection of paramagnetic species (rat), **153**, 275
capillary endothelium, detection of insulin-like growth factor receptors: potential regulation of IGF-I transport to cardiac muscle (rat), **152**, 93
detection of 12-kDa brain natriuretic peptide (pig), **155**, 740
distribution of fructose 6-phosphate,2-kinase:fructose-2,6-bisphosphatase isozymes, analysis (bovine, rat), **157**, 949
failing, association with augmented synthesis of β-atrial natriuretic factor (human), **150**, 60
guanine nucleotide exchange factor activity, effect of diabetes (rat), **156**, 706
inside-out perfused atria, epicardial release of immunoreactive atrial natriuretic peptides (rabbit), **153**, 811
ischemia-induced mitochondrial dysfunction and leakage of lysosomal enzymes, effects of sodium channel blocker SUN 1165 (dog), **157**, 433
isolated cells, desensitization to norepinephrine, role of refractoriness of intracellular calcium release (rat), **151**, 333
junctional conductance in isolated cell pairs, enhancement by isoproterenol, suppression by cAMP-dependent protein kinase inhibitor (rat), **154**, 509
myocardial ischemic injury, mechanisms: effect of catecholamines (guinea pig), **150**, 1268
myocardial pH, ^{31}P NMR measurements *in vivo* (cat, dog, sheep), **151**, 70
myocytes, detection of fibroblast growth factors (adult rat), **157**, 1336
postischemic
ATP and creatine phosphate content, determination by ^{31}P MR spectroscopy (guinea pig), **151**, 865
effect of inosine as bioenergy recovering factor, analysis by ^{31}P MR spectroscopy (guinea pig), **151**, 1408
protein kinase C activity, increase during progression of cardiomyopathy (hamster), **157**, 507
sarcolemmal Na^+–Ca^{2+} exchange, stimulation by concanavalin A (rat), **154**, 245
valve, cultured endothelial cells, glycoprotein synthesis: lack of fibronectin production (pig), **153**, 46
ventricular muscles, positive inotropic effects and binding characteristics of calcitonin gene-related peptide (pig), **155**, 289
ventricular preproenkephalin A mRNA levels, cardiomyopathy-associated increase (hamster), **155**, 449
Heat shock
associated protein, transformation-sensitive 47-kDa collagen-binding, characterization (chicken embryo), **153**, 428
induced protein migration and DNA repair inhibition, protection by cycloheximide (CHO cells), **157**, 611
induced thermotolerance, relation to peroxidase and superoxide dismutase levels (*Neurospora crassa*), **156**, 1097
inhibition of NADPH oxidase and superoxide production (human neutrophils), **154**, 179
related decline in active elongation factor 1α activity and amounts in aging and immortal fibroblasts (human), **152**, 169
Helicase
associated activity of origin-binding forms of simian virus 40 large T antigen, analysis (CV-1 cells), **153**, 249
Hemagglutination
calcium-mediated, by serum amyloid P component, inhibition by glycosaminoglycans (human), **150**, 212
Hematoporphyrin
photodynamic toxicity for colon carcinoma HT-29 cells: combined light and concentration dose responses for retained fraction (human), **151**, 506
Heme
hepatic levels, decline produced by tumor transplantation, prevention by tin-protoporphyrin inhibition of heme oxygenase (mouse), **150**, 822
hyperfine shifted methyl carbon resonances, in natural abundance ^{13}C NMR of paramagnetic ferricytochrome *c*–cyanide complex, assignment (equine heart), **151**, 262
regulation of cytochrome P450 gene transcription elongation (rat liver), **151**, 737; *erratum*, **152**, 1511
synthesis in hepatoma cells, regulation by dimethyl sulfoxide (human), **153**, 869
synthetic analogs, inhibition of renal heme oxygenase (human), **157**, 480
Heme oxygenase
detection of two isoforms (human testis), **154**, 285
gene expression, developmental analysis (human, rat liver), **150**, 717
hepatic, inhibition by tin-protoporphyrin in tumor-bearing mice, prevention of decline in heme and cytochrome P450 levels, **150**, 822
inhibition by synthetic heme analogs and metalloporphyrins (human kidney), **157**, 480
Hemochromatosis
hereditary, associated iron overload, effect on DNA repair in lymphocytes (human), **154**, 698; *erratum*, **156**, 610
Hemocyanin
polymers, subunit composition (*Portunus trituberculatus*), **153**, 748
Hemoglobin
binding to synthetic 2-hydroxyamino-6-methyldipyrido-

[1,2-*a*:3′,2′-*d*]imidazole and 2-nitroso oxidation product, **151**, 1326
formation of porphyrin π-cation radical: analysis of electron oxidation products of nickel(II)-substituted hemoproteins, **151**, 1319
intramolecular crosslinking agents, synthesis of bispyridoxal polyphosphates for, **156**, 9
subunits α1 and β1, interaction (human), **156**, 348
synthesis in reticulocyte lysates, inhibition by 2,3-bisphosphoglycerate (rabbit), **157**, 134
Hemolymph
associated proteins, formation of fibrous coagulum during hemostasis (*Manduca sexta* larva), **155**, 1060
free fatty acid transport and utilization (*Triatoma infestans*), **157**, 465
Hemopexin
plasma, N-terminal amino acid sequence, species comparison (chicken, human, rabbit, rat), **155**, 622
Hemoprotein
platelet, role in ajoene inhibition of platelet aggregation (bovine), **153**, 479
Hemorrhage
hereditary cerebral, with amyloidosis-Dutch type, amyloid protein amino acid sequence: homology with Alzheimer's β-protein precursor (human), **151**, 1150
Hemostasis
analysis in larvae: formation of fibrous coagulum by hemolymph proteins (*Manduca sexta*), **155**, 1060
Heparan sulfate
with antithrombin III affinity and anticoagulant potency, isolation (murine BALB/c 3T3, B16.F10 melanoma, cutaneous fibrosarcoma UV324 cells), **151**, 327
inhibition of Ca^{2+}-mediated hemagglutination by serum amyloid P component (bovine kidney), **150**, 212
Heparin
administration for *in vivo* inhibition of endogenous atriopeptin (rat), **155**, 990
binding by fibroblast-secreted fibronectin, effect of tyrosine *O*-sulfate desulfation (rat), **154**, 1094
binding protein, identification on sperm surface (bovine), **153**, 289; *erratum*, **155**, 1485
cofactor II, activation by heparin oligosaccharides (human), **152**, 1056
effects on inositol 1,4,5-trisphosphate-dependent and -independent Ca^{2+} release induced by guanine nucleotide in vascular smooth muscle (rabbit), **153**, 625
interaction with concanavalin A: isolation of fraction with higher anticoagulant activity, **155**, 216
protection of heparin-binding growth factor I from proteolytic inactivation in endothelial cell cultures (human, mouse), **152**, 432
Heparin-binding growth factor
class I
internalization and degradation by endothelial cells (murine lung), **151**, 957
proteolytic inactivation in endothelial cell cultures, protection by heparin (human, mouse), **152**, 432
Heparin-binding growth factor receptors
130-kDa membrane glycoprotein with similar properties, purification (human hepatoma cells), **157**, 1007
Hepatitis B virus
replication, inhibition by purine 2′,3′-dideoxynucleosides (duck), **156**, 1144
Hepatocyte proliferation stimulatory factor
partial purification and characterization after D-galactosamine treatment (rat), **150**, 133
Hepatocytes, *see also* Liver
ATP depletion and toxicity induced by 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine, prevention by fructose (rat), **153**, 734
autophagic and endocytic pathways, prelysosomal convergence (rat), **151**, 40
bile acid synthesis *in vitro*, feedback inhibition (pig), **155**, 850
carnitine palmitoyltransferase short-term regulation, assay methods (rat), **151**, 781
C-reactive protein and serum amyloid A synthesis *in vitro*, effects of interleukins 1 and 6 (human), **155**, 112
fatty acid synthesis *in vitro*, differential effects of 1-oleoyl-2-acetylglycerol and phorbol ester (rat), **151**, 193
fibroblast-like transformation and c-*myc* gene alteration, induction by novobiocin and butyrate (human), **155**, 305
fluid-phase and receptor-mediated endocytosis *in vitro*, monensin effects (rat), **152**, 1275
fresh, isolation from periportal and pericentral regions of liver lobule (rat), **155**, 455
and hepatoma cells, differential regulation of insulin-like growth factor II receptors, characterization (rat), **151**, 815
necrosis, experimental model, effects of polysaccharide chain of lipopolysaccharide (mouse), **155**, 1305
nodules associated with hepatocarcinogenesis, decreased expression of cytochrome P452 (rat), **152**, 921
phorbol ester-stimulated, membrane-bound protein kinase C proteolytic cleavage and degradation, inhibition by cyclosporin A (human), **151**, 997
plasma membrane fluidity, age- and sex-related changes (rat), **156**, 840
preneoplastic nodules, induction by ethionine, associated DNA hypomethylation (rat), **150**, 739
primary cultures
hydroxylation, conjugation, and sulfation of bile acids (rat), **154**, 1114
ligand-dependent maintenance of ethanol-inducible cytochrome P450 (rat), **150**, 436
proliferation
induced by partial hepatectomy, associated rearrangement of nuclear calmodulin, analysis (rat), **150**, 1162
stimulating growth factor from spleen, identification (rat), **153**, 1123
reoxygenation injury *in vitro*: conversion of xanthine dehydrogenase to xanthine oxidase after cell death (rat), **155**, 278
secretion of very-low-density lipoproteins *in vitro*, inhibition by 7-ketocholesterol (human, rabbit), **153**, 1116
short-term incubations with ethanol, inhibition of carnitine palmitoyltransferase I (rat), **154**, 682
vasopressin-stimulated breakdown and metabolism of ino-

sitol lipids, early effects of *Escherichia coli* endotoxin (rat), **155**, 151
zinc accumulation *in vitro*, endotoxin-induced, mediation by metallothionein synthesis, **152**, 874
Hepatocyte-stimulating factor, *see* Interleukin 6
Hepoxilin A3
formation and metabolism in brain, analysis (rat), **151**, 493
Heptafluorobutyrophenone
cholesterol esterase-inhibiting, synthesis and evaluation, **151**, 554
Herpes simplex virus type I
infectivity, antagonistic effect of interferon, inhibition by neomycin and mimicking by diacylglycerols (human embryonic fibroblasts), **151**, 402
Hexachlorobenzene
induced experimental porphyria, mitochondrial porphyrin level, effect of iron overload (rat liver), **151**, 320
Hexadecane
Candida maltosa grown on, cytochrome P450 mRNA synthesis, indirect induction by oxygen limitation, **150**, 859
1-*O*-Hexadec-1′-enyl-2-acetyl-*sn*-glycero-3-phosphocholine
preparation and biological activity (bovine heart), **151**, 1256
1-*S*-Hexadecyl-2-methoxymethyl-*rac*-glycero-3-phosphocholine
inhibition of Na,K-ATPase and sodium pump (rat brain), **157**, 1000
Hexafluoroethane
potency, correlation with ^{19}F spin–spin relaxation times in brain and adipose tissues (rat), **151**, 1039
1-Hexanol
and other general anesthetics, effects on nerve impulse blockade and on proteinaceous target site, comparison (squid giant axon), **154**, 47
Hexokinase
activity in developing brain, relationship to insulin effect on [^{14}C]valine incorporation (rat), **154**, 450
amino- and carboxyl-terminal halves, sequence homology (human kidney), **157**, 937
deficient mutant, in analysis of role of glucose metabolism via Embden–Meyerhof pathway in ATP production during spore germination (*Bacillus megaterium*), **151**, 48
role in hexose monophosphate pathway regulation under oxidative stress (human erythrocytes), **155**, 423
β-Hexosaminidase, *see* β-*N*-Acetylhexosaminidase
Hexose monophosphate pathway
regulation under oxidative stress, role of hexokinase (human erythrocytes), **155**, 423
Histamine
effect on 1,4,5-trisphosphate levels in cerebral cortex slices: mass measurements by radioreceptor assay (rat), **157**, 684
stimulated cytosolic 30-kDa phosphoprotein, characterization (rabbit parietal cells), **154**, 489
stimulated synaptosomal Ca^{2+} uptake, mechanism: activation of calcium channels (rat brain), **153**, 1136
Histamine receptors
H_1, retinal, species differences, **150**, 316
H_2, demonstration on melanoma cells (human), **151**, 518
Histidine
at active site of glucose/xylose isomerase, role in catalytic activity (*Streptomyces* sp.), **155**, 270
conserved residue in position 188 of L-lactate dehydrogenase, role in allosteric regulation by fructose 1,6-bisphosphate (*Thermus caldophilus*), **152**, 1236
muscarinic M1 receptor residues, role in ligand binding (rat cerebral cortex), **151**, 1069
residues His-13 and His-114, identification as sites of bromoacetate modification of angiogenin at pH 5.5 (human), **156**, 530
Histidine decarboxylase
induction after stimulation of basophilic leukemia tumor cells by crosslinked oligomer of IgE or phorbol ester (rat), **151**, 1402
Histidinohydroxylysinonorleucine
content in skin collagen, effect of aging (bovine, human), **152**, 898
Histones
–agarose, tight binding of activated glucocorticoid receptor complexes, **151**, 763
H1
acetylation in sensitive (LoVo/Dx) and resistant (LoVo) colon adenocarcinoma cell lines, effects of doxorubicin (human), **155**, 1221
antigenic determinant, identification as nuclear envelope component in HEp-2 cells, **156**, 675
phosphorylated sperm-specific, extraction from eggs, analysis of phosphopeptide maps (sea urchin), **151**, 1200
variants, homology with adenine nucleotide-binding proteins, **153**, 783
H4, mRNA storage as small cytoplasmic ribonucleoprotein during G_2 phase (*Physarum polycephalum*), **153**, 162
phosphorylation during repression of proliferation, analysis (*Physarum polycephalum*), **153**, 518
HIV, *see* Human immunodeficiency virus
Homidium bromide
and spleen phosphodiesterase, controlled degradation of yeast $tRNA^{Phe}$, **152**, 477
Homo L-arginine
vasodilatory properties on aortic rings, analysis (rat), **154**, 332
Horseradish peroxidase
formation of porphyrin π-cation radical: analysis of electron oxidation products of nickel(II)-substituted hemoproteins, **151**, 1319
interaction with propylthiouracil and precursors, **153**, 904
turnover and inactivation, role of oxygen, **157**, 160
Human chorionic gonadotropin
β subunit, cleavage product characterization, **154**, 626
chemically deglycosylated, evidence for impaired subunit interaction, **156**, 1271
regulation of Leydig's cell cytochrome $P450_{17\alpha}$ mRNA levels (rat), **154**, 151
transient activation of c-*myc* protooncogene expression in Leydig cells, **157**, 121
Human immunodeficiency virus
antiviral agents 3′-azido-3′-deoxythmidine and 3′-azido-

2′,3′-dideoxyuridine, 5′-phosphates, interaction with thymidylate synthase (*Hymenolepis diminuta*, mouse), **155**, 1418
antiviral effect of 3′-fluorothymidine, analysis in human cell lines, **153**, 825
2′,3′-dideoxycytidine inhibitor, structural features, **151**, 608
DNAs, homologous recombination in cultured cells, analysis of influencing factors (human), **157**, 1051
envelope glycoproteins, monoclonal antibodies to, production and characterization *in vitro* (human), **155**, 1105
infected humans, coenzyme Q_{10} biochemical deficiencies, exploratory treatment, **153**, 888
potent and selective antiviral activity of carbocyclic nucleoside analog *in vitro*, **156**, 1046
replication *in vitro*, selective inhibition by fuchsin acid, **155**, 1404
reverse transcriptase inhibitor 3′-azido-3′-deoxythymidine crystal structure: conformation and sandwiching of bases by azido groups, **152**, 351
type 1
infected CD4-positive cells, augmentation and stable expression of associated transcription factor SII (human), **155**, 1346
protease, peptide cleavage specificity, sufficiency for processing gag and pol polyproteins, **156**, 297
Human T-cell lymphotropic virus type I
infected T-cell line, expression of parathyroid hormone-related protein (human), **154**, 1182
Humoral factors
role in decreased extracellular matrix production in scurvy (guinea pig), **152**, 1490
Hyalin
structural stabilization, role of calcium (*Strongylocentrotus droebachiensis*), **152**, 830
Hyaluronic acid
inhibition of Ca^{2+}-mediated hemagglutination by serum amyloid P component (human umbilical cord), **150**, 212
synthesis and secretion by hepatic fat-storing cells *in vitro* (rat), **151**, 222
Hybridization
dot-blotting, supersensitive: rapid quantitative detection of host-derived DNA in recombinant products at 1-pg level (yeast), **152**, 9
with homologous DNA oligonucleotide probes: preparation from heterologous gene sequences and probes (yeast), **157**, 154
nuclear 7 S RNAs to regulatory regions of c-*myc* and simian virus 40 genes (HeLa, 3T3 cells), **152**, 753
in situ
associated patterns of zebrafish homeobox genes homologous to murine *Hox-2.1* and *En-2*, **157**, 426
with biotinylated probes, in colocalization of luteinizing hormone and follicle-stimulating hormone β-subunit mRNAs (porcine anterior pituitary), **154**, 80
in detection of large neurofilament subunit NF-H mRNA in CNS neurons (rat), **154**, 1099
Hybridoma growth factor, *see* Interleukin 6
Hydralazine
and angiotensin-converting enzyme inhibitor CS 622, comparative effects on atrial natriuretic factor plasma levels after chronic treatment (spontaneously hypertensive rat), **152**, 456
Hydration memory
role in lysozyme kinetics in low water activity media, **155**, 816
Hydrazine
radical formation, catalysis by microsomal NADPH–cytochrome P450 reductase (rat liver), **153**, 256
Hydrochloric acid
–ethanol induced gastric ulcer, suppression by metallothionein-II intravenous administration (rat), **151**, 725
Hydrocortisone
binding globulin, induction of adenylate cyclase in mammary carcinoma cells (human), **153**, 1012
reduction of tumor necrosis factor receptor affinity and cytotoxicity (human MCF-7 cells, murine L-M cells), **153**, 402
Hydrogen
–sodium antiport
brush border membrane, molecular size estimation by radiation inactivation (rat kidney), **152**, 484
detection in gastric smooth muscle cells (dog), **151**, 473
inhibition and labeling by antagonist of muscarinic acetylcholine receptors (rat kidney), **157**, 921
membrane-associated, role in ornithine decarboxylase induction by L-asparagine (rat hepatoma cells), **155**, 937
role in potentiation of thrombin-induced responses by epinephrine (human platelets), **151**, 178
Hydrogen peroxide
activation of CD11b/CD18-dependent cell adhesion (U-937 cells), **157**, 443
dependent oxidation of xenobiotics, in analysis of hydroperoxidase activity of lipoxygenase, **155**, 1075
fatty acid-dependent production in *Lactobacillus*, **152**, 113
generation in
cerebral mitochondria, pathways (guinea pig), **154**, 727
monocyte-derived macrophages in culture, stimulation by platelet-activating factor (human), **156**, 1293
thyroid slices, inhibition, role in inhibition of iodide binding to proteins: Wolff–Chaikoff effect (dog), **154**, 1287
whole pancreatic islets, synergistic regulation by cytoplasmic free calcium and protein kinase C (rat), **155**, 569
role in erythropoietin production by renal carcinoma cells (human), **154**, 773
Hydrolysis
alkaline, 150- and 170-kDa forms of epidermal growth factor receptors, comparison (human A431 cells), **153**, 183
atriopeptin 2 by angiotensin-converting enzyme cardiac and pulmonary isozymes, analysis (human), **151**, 109
enzymatic, *S*-benzyl-L-cysteine-*p*-nitroanilide, inhibition by L-leucine and analog (*Escherichia coli*), **153**, 767
GTP, and associated tubulin polymerization, effects of

aluminum ion, fluoride, and fluoroaluminate species (bovine brain), **151**, 1025
inositol phospholipids, role in opening of voltage-operated Ca^{2+} channels, analysis with F^- and caffeine (guinea pig ileum), **153**, 14
insulin-sensitive phosphatidylinositol-glycan, stimulation by epidermal growth factor and insulin-like growth factor I (BC3H-1 myocytes), **156**, 1346
membrane-partitioning tetracaine analog, rate monitoring by membrane spin label spectra, **152**, 344
phosphatidylcholine
in BC3H-1 myocytes, effects of insulin and phorbol ester, **154**, 1345
in REF52 cells, stimulation by vasopressin, **152**, 565
phosphatidylinositol-4,5-bisphosphate by soluble phospholipase C from platelets, 5′-(3-*O*-thio)triphosphate-stimulated, mediation by GTP-binding protein (human), **154**, 351
phosphoinositides, bombesin- and platelet-derived growth factor-induced phospholipase C-mediated, differential sensitivity to phorbol esters and pertussis toxin (murine NIH 3T3 cells), **152**, 285
Hydroperoxidase
associated activity of lipoxygenase, analysis: hydrogen peroxide-dependent oxidation of xenobiotics, **155**, 1075
15-Hydroperoxyeicosatetraenoic acid
effect on arachidonic acid metabolism in collagen-stimulated platelets (human), **150**, 177
and related eicosanoids, inhibition of 5-lipoxygenase (human leukocytes), **155**, 38
3β-Hydroxy-5α-cholest-8(14)-en-15-one
active metabolite, enzymatic formation, chemical synthesis, and functional analysis (CHO-K1 cells, rat), **151**, 130
12-Hydroxyeicosatetraenoic acid
mediation of angiotensin II-induced adrenal aldosterone synthesis: role of diacylglycerol as source of arachidonic acid for 12-HETE formation (human), **156**, 717
R- and *S*-form, formation by NAD(P)H-dependent reduction of 12-ketoeicosatetraenoic acid (rat hepatic microsomes), **156**, 1083
15-Hydroxyeicosatetraenoic acid
specific binding to cultured anterior pituitary cells (rat), **152**, 1179
19(*S*)-Hydroxyeicosatetraenoic acid
stimulation of Na^+,K^+-ATPase (rat kidney), **152**, 1269
15-Hydroxyeicosatetraenoic acid dehydrogenase
in microsomal fraction of liver homogenate, assay (mouse), **156**, 524
Hydroxyeicosatetraenoic acids
ketones, evaluation as lipoxygenase substrates (rat, soybean), **154**, 544
15-Hydroxyeicosatrienoic acid
modulation of arachidonic acid metabolism (murine macrophages), **153**, 799
Hydroxylase
associated with methane monooxygenase system, purification to high specific activity from type II methanotroph (*Methylosinus trichosporium*), **154**, 165
Hydroxylation
and aromatization, androgens by cytochrome P450 (rat brain), **150**, 311
bile acids in primary monolayer cultures of hepatocytes (rat), **154**, 1114
debrisoquine, catalyzing polymorphic monooxygenase, mediation of codeine bioactivation in liver (human), **152**, 411
estradiol-17β in MCF-7 breast cancer cells, enhancement by dioxin (human), **157**, 515
Hydroxyl radicals
formation during interaction between 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine metabolites and synthetic neuromelanin, ESR, optical, and oxidase electrode study, **154**, 781
5-Hydroxymethylcytosine
releasing DNA glycosylase, detection in thymus extract (bovine), **151**, 1173
Hydroxymethylglutaryl-CoA reductase
inhibition by 6-nitrocholesterol (murine L cells), **153**, 671
3-Hydroxy-3-methylglutaryl-CoA reductase kinase
microsomal, AMP allosteric and catalytic sites, reaction with 5′-*p*-fluorosulfonylbenzoyladenosine (rat liver), **148**, 1009; *erratum*, **150**, 897
β-Hydroxy-β-methylglutaryl-CoA synthase
cytosolic, effect of olive oil feeding (rat), **153**, 422
2-Hydroxy-5-nitrobenzyl bromide
effect on proton translocation by mitochondrial H^+-ATPase (bovine heart), **155**, 130
4-Hydroxyphenylacetic acid 3-hydroxylase
purification and properties (*Pseudomonas putida*), **154**, 537
(*S*)-9-(3-Hydroxy-2-phosphonylmethoxypropyl)adenine
inhibition of African swine fever virus DNA synthesis (monkey kidney cells), **154**, 27
Hydroxyproline
free and small peptide-bound, *in vitro* synthesis in normal and fibrotic liver (rat), **151**, 1128
[Hydroxyproline^3]-bradykinin
released from plasma and plasma protein Cohn's fraction IV-4 by trypsin, identification (human), **157**, 210
[Hydroxyproline^3]-lysyl-bradykinin
release from kallikrein-stimulated human plasma protein (ovine pancreas), **150**, 511
17β-Hydroxysteroid dehydrogenase
pancreatic, characterization (dog), **152**, 376
5-Hydroxytryptamine, *see* Serotonin
Hydroxyurea
resistance reversion, relationship to coamplification of ribonucleotide reductase M2 component, ornithine decarboxylase, and P5-8 genes (CHO cells), **154**, 975; *erratum*, **156**, 1419
Hygromycin B phosphotransferase
encoding gene, 5′ region, promoter activity, analysis, **151**, 270
Hyperglycinemia
associated impaired expression of glycine decarboxylase (human), **154**, 292

Hypermethylation
c-*abl* genomic locus, detection in spleen (juvenile rat), **154**, 1061
Hyperphenylalaninemia
identification of 7-substituted pterins in affected patient, **153**, 715
Hypertension
effect on protein kinase C activity and reactivity to phorbol ester in vascular smooth muscle (rat), **154**, 272
erythrocytes from affected humans, selective increased phosphorylation of anion-transport protein, role of calpain, **151**, 590
essential, calpastatin defect in erythrocytes from patients, characterization, **157**, 867
primary, frequency of alleles for renin gene-associated restriction fragment length polymorphism (human), **150**, 219
spontaneous
atrial natriuretic factor plasma levels in, comparative effects of angiotensin-converting enzyme inhibitor CS 622 and vasodilator hydralazine after chronic treatment (rat), **152**, 456
and stroke-prone SH, plasma free and bound atrial natriuretic peptide levels, comparison: preferential increase of free ANP (rat), **153**, 1084
Hypertriglyceridemia
transient, induction by lovastatin (hamster), **157**, 530
Hypomethylation
cell-specific, pepsinogen gene in pepsinogen-producing cells (guinea pig stomach), **155**, 670
Hypophosphatasia
cultured dermal fibroblasts and tissues from patients, accumulation of phosphoethanolamine, **154**, 948
Hypothalamus
neuronal thyrotropin-releasing hormone synthesis: developmental and circadian TRH mRNA levels (rat), **151**, 615
and placenta, differential processing of corticotropin-releasing hormone (human), **153**, 1229
Hypoxia
induced damage, generation of reactive oxygen species in isolated perfused liver (rat), **150**, 568

I

Imidazole
induction of tyrosinase in cultured B16/C3 melanoma cells, effects of 3,3′,5-L-triiodothyronine and L-thyroxine, comparison (mouse), **155**, 1293
Immunoaffinity chromatography
recombinant human prorenin produced in CHO cells, **152**, 849
Immunogens
peptide, for synthetic malaria vaccines, construction (mouse), **153**, 31
Immunoglobulins
heavy-chain locus, physical linkage of variable region and joining region (human), **154**, 265
IgE
and albumin, encoding genes, methylation by *N*-nitrosodimethylamine, comparison (rat liver), **155**, 14
crosslinked oligomer, stimulation of basophilic leukemia 2H3 cells, subsequent induction of histidine decarboxylase (rat), **151**, 1402
IgG
anti-thyroglobulin, detection in healthy humans, **155**, 224
surface-bound, neutrophil activation: pertussis toxin insensitivity (human), **152**, 136
IgM, production-stimulatory activity of B-cell stimulatory factor/interleukin 6 produced by endothelial cells (human), **153**, 1045; *erratum*, **157**, 850
Indoleamine dioxygenase
induction by recombinant interferons and various cytokines, analysis (murine lung), **152**, 237
Infection
hematopoietic progenitor cells with retroviral vectors prepared with amphotropic or xenotropic envelope, comparison (human), **151**, 201
Inflammation
acute-phase response
associated increase in albumin synthesis by free hepatic ribosomes (rat), **152**, 744
mRNAs for serum amyloid P component, C-reactive protein, and prealbumin, analysis (murine liver), **155**, 554
eye, interleukin-1-induced, inhibition by platelet-activating factor antagonist (rabbit), **154**, 429
Influenza virus
neuraminidase, amino acid sequence, comparison with lysosomal sphingolipid activator protein 1, implications for SAP-1 structure, **155**, 32
Inheritance
maternal, deleted mitochondrial DNA in family with mitochondrial myopathy, demonstration, **154**, 1240
Inhibin
production by follicular granulosa cells, modulation by erythroid differentiation factor (rat), **153**, 281
Initiation factors
eIF-2
β subunit, specific phosphorylation by different protein kinases (bovine brain), **153**, 313
phosphorylation by casein kinase II in reticulocyte lysates, inhibition by 2,3-bisphosphoglycerate (rabbit), **157**, 134
eIF-4F, p220 subunit, phosphorylation by cAMP-dependent protein kinase and protein kinase C *in vitro* (rabbit reticulocytes), **153**, 925
Inosine
effect on postischemic heart as bioenergy recovering factor, analysis by ^{31}P MR spectroscopy (guinea pig), **151**, 1408
Inositol monophosphate phosphatase, *see* 1L-*myo*-Inositol-1-phosphatase
Inositol pentakisphosphate
formation from inositol 1,3,4,6-tetrakisphosphate in adrenal glomerulosa cells (bovine), **157**, 1247

1L-*myo*-Inositol-1-phosphatase
purification (bovine brain), **156**, 143
Inositol phosphate 5-phosphomonoesterase
detection in neutrophils: effect of protein kinase C activation on enzyme activity (rabbit), **155**, 189
Inositol phosphates
di-*O*-alkylglycerol, mono-*O*-alkylglycerol, and ceramide, isolation and characterization (*Leishmania mexicana* promastigotes), **157**, 1239
production in
cerebral cortex, agonist-induced, inhibition by fluoride (rat), **155**, 664
cultured thyroid cells, induction by epidermal growth factor (pig), **151**, 530
fibroblasts, platelet-derived growth factor-stimulated, effect of interferon (mouse), **150**, 1207; *erratum*, **151**, 1461
GH_4C_1 pituitary tumor cells, stimulation by bombesin and thyrotropin-releasing hormone, comparison, **154**, 654
hepatocytes, vasopressin-stimulated, early effects of *Escherichia coli* endotoxin (rat), **155**, 151
lymphocytes, mitogen-induced, effect of anti-HLA class I monoclonal antibodies inhibiting cell proliferation (human), **154**, 712
separation by ion-pair chromatography, **151**, 114
Inositol phospholipids
hydrolysis, role in opening of voltage-operated Ca^{2+} channels, analysis with F^- and caffeine (guinea pig ileum), **153**, 14
Inositol 1,3,4,5-tetrakisphosphate
cytosolic, degradation to inositol 1,3,4- and 1,4,5-trisphosphate (porcine brain), **154**, 668
production in aorta, stimulation by norepinephrine (rat), **156**, 240
stimulation of protein phosphatase (rat brain), **155**, 767
transient accumulation in response to α_1-adrenergic stimulation in adult cardiomyocytes (dog), **156**, 485
Inositol 1,3,4,6-tetrakisphosphate
metabolism to inositol pentakisphosphate in adrenal glomerulosa cells (bovine), **157**, 1247
Inositol 1,3,4-trisphosphate
cytosolic, formation from inositol 1,3,4,5-tetrakisphosphate (porcine brain), **154**, 668
Inositol 1,4,5-trisphosphate
binding in peritoneal macrophages, characterization (guinea pig), **155**, 1173
cytosolic, formation from inositol 1,3,4,5-tetrakisphosphate (porcine brain), **154**, 668
dependent and independent Ca^{2+} release induced by guanine nucleotide in vascular smooth muscle, heparin effects (rabbit), **153**, 625
induction of Ca^{2+} release from platelet plasma membrane vesicles, **150**, 1021
inhibition of Ca^{2+} pump in cardiac sarcolemmal vesicles (rat), **152**, 1111
mass measurements in cerebral cortex slices by radioreceptor assay, effects of neurotransmitters and depolarization (rat), **157**, 684
production in
cerebral cortex and hippocampus, electroconvulsive shock-induced, inhibition by carbamazepine (rat), **153**, 128
fibroblasts from progressive systemic sclerosis patients, effect of bradykinin, **156**, 1077
NG108-15 and NIH 3T3 cells, bradykinin-induced, effects of pertussis toxin, extracellular Ca^{2+}, and protein kinase C down-regulation, **157**, 1429
stimulation of protein phosphatase (rat brain), **155**, 767
Inositol 1,4,5-trisphosphate 3-kinase
Ca^{2+}/calmodulin-sensitive, detection in brain (bovine, rat), **153**, 632
Inositol trisphosphates
production in
aorta, stimulation by norepinephrine (rat), **156**, 240
neutrophils activated by serum-opsonized and nonopsonized particulate stimuli, relationship to calcium mobilization and superoxide anion release (human), **150**, 532
DL-*myo*-Inositol 1,4,5-trisphosphorothioate
mobilization of intracellular Ca^{2+} (Swiss 3T3 cells, *Xenopus* oocytes), **150**, 626
Insulin
action in early embryonic life: effects of anti-insulin receptor antibodies on growth and muscle differentiation *in vivo* (chicken), **153**, 142
binding kinetics in incubated H35 cells, disappearance of negative cooperativity in cells with short incubation (rat), **157**, 1390
binding to receptor
effects on receptor conformational states, **157**, 140
localization to cysteine-rich region of α subunit (human), **157**, 321
effect on
[^{14}C]valine incorporation and relationship to hexokinase activity in developing brain (rat), **154**, 450
dexamethasone induction of glucose-6-phosphohydrolase and translocase *in vitro* (2S FAZA hepatoma cells), **153**, 307
diacylglycerol generation and phosphatidylcholine synthesis and hydrolysis (BC3H-1 myocytes), **154**, 1345
protein kinase C in cultured intestinal crypt cells (rat), **154**, 278
and glucose, modulation of adipocyte protein kinase C (rat), **156**, 570
hepatic binding, analysis in rats with non-insulin-dependent diabetes, **152**, 1015
induction of
Alu sequence-containing transcript in hepatoma cells (human), **156**, 1287
negative cooperativity, reversal by monoclonal antibodies to insulin receptor, **150**, 694
protein kinase FA activation and translocation in platelets (human), **151**, 61
tyrosine phosphorylation in intact adipocytes, analysis (rat), **155**, 1181
inhibition of alkaline phosphatase activity in cerebral microvessels (bovine), **150**, 583

and insulin-like growth factor I, cross-reactivity in retina, analysis (bovine eye), **151**, 1105
and insulin-like growth factor II, parallel effects on glucose metabolism of developing embryonic limb buds in culture (mouse), **152**, 359
and insulinomimetic oligosaccharide, regulation of protein phosphorylation, comparison (Fao hepatoma cells, 3T3-L1 adipocytes), **153**, 992
mediation of
glucose transporter translocation from intracellular membranes to plasma membranes: sole mechanism of glucose transport stimulation in L6 muscle cells, **157**, 1329
post-transcriptional regulation of hepatic malic enzyme and albumin mRNAs (rat), **154**, 1081
monoiodinated forms, binding to hepatic and muscular receptors, comparison (rat), **152**, 1353
and proinsulin, effects on glucose utilization and lipid synthesis pathways in lactating mammary gland *in vitro*, comparison (rat), **154**, 443
receptor-bound, degradation by insulin-degrading enzyme (rat liver), **150**, 605
reduction by lipoamide-reduced thioredoxin fragment 31–36 (bovine), **150**, 156
regulated gene, selective transcription in hepatoma cell nuclear extracts (rat), **153**, 116
resistance, induction by unprocessed insulin proreceptors with point mutation at cleavage site (human), **153**, 657
secretion by
beta cells
and cytoplasmic free Ca^{2+} levels, dual effect of glucose, relationship to cellular fuel deprivation (mouse), **153**, 984
effect of arginine and glucagon (rat), **151**, 948
role of cell contact (rat), **153**, 999
fetal pancreas, inhibition by chronic stimulation with phorbol ester (human), **151**, 1269
insulinoma cells, synergistic stimulation by arginine vasopressin and phorbol esters (rat), **151**, 717
pancreatic islets, stimulation by activin A (rat), **156**, 335
sensitive phosphatidylinositol-glycan, localization at hepatocyte membrane outer surface (rat), **152**, 1455
short-term stimulation of lipoprotein lipase secretion in adipose cells (mouse, rat), **154**, 982
stimulated processes in adipocytes, effect of phorbol ester (rat), **154**, 171
stimulation of protein kinase phosphorylating ribosomal protein S6 (rat skeletal muscle), **152**, 1200

Insulin-degrading enzyme, *see* Insulin protease
Insulin-like growth factor I
induction of
increase in c-*fos* expression in FRTL5 cells, role of c-*fos* promoter activation (rat thyroid), **151**, 1194
rapid changes in nuclear phospholipid metabolism (Swiss 3T3 fibroblasts), **154**, 1266
and insulin, cross-reactivity in retina, analysis (bovine eye), **151**, 1105
local synthesis, role in growth hormone-dependent stimulation of osteoblast-like cells in serum-free cultures (rat), **151**, 142
mistranslation during overexpression by synthetic gene containing low-frequency codons (*Escherichia coli*), **155**, 518
mitogenic effects, analysis (rat pheochromocytoma PC12 cells), **154**, 1018
N-terminal tripeptide, role in binding of insulin-like growth factor-binding protein purified from conditioned medium (MDBK cells), **151**, 207
and receptor, expression by hepatoma cell lines, analysis: evidence of autocrine regulation (human), **153**, 39
stimulated DNA synthesis in dermal fibroblasts, inhibition and potentiation by growth hormone-dependent insulin-like growth factor-binding protein (human), **156**, 199
stimulation of
chemotaxis in melanoma cells (human), **153**, 1076
insulin-sensitive phosphatidylinositol-glycan hydrolysis in BC3H-1 myocytes, **156**, 1346
transport to cardiac muscle, potential regulation by IGF receptors in myocardial capillary endothelium (rat), **152**, 93
Insulin-like growth factor II
high-molecular-weight forms, and binding protein, identification by immunoblotting (human serum), **152**, 1131
and insulin, parallel effects on glucose metabolism of developing embryonic limb buds in culture (mouse), **152**, 359
isolation and characterization (human bone), **151**, 1011
and mannose 6-phosphate
detection of distinct binding sites (human fibroblasts, liver), **150**, 1287
simultaneous binding to hepatic M6P/IGF-II receptor (human), **152**, 1248
mitogenic effects, analysis (rat pheochromocytoma PC12 cells), **154**, 1018
stimulation of chemotaxis in melanoma cells (human), **153**, 1076
Insulin-like growth factor I receptors
characterization in breast cancer cells (human), **154**, 326
detection in
breast cancer cells (human), **152**, 398
myocardial capillary endothelium: potential regulation of IGF-I transport to cardiac muscle (rat), **152**, 93
distribution in adrenal gland (rat), **154**, 138
and insulin receptors, associated tyrosine-specific protein kinase activities, characterization with inhibitors (human placenta), **157**, 955
Insulin-like growth factor II receptors
affinity increase by mannose 6-phosphate displacement of inhibitory endogenous ligands (human, rat), **157**, 632
coupling to calcium gating system (murine fibroblasts), **154**, 9
detection in
breast cancer cells (human), **152**, 398
myocardial capillary endothelium (rat), **152**, 93
differential regulation in hepatocytes and hepatoma cells,

characterization (rat), **151**, 815
Insulin-like growth factors
binding proteins
classification according to binding specificity (human), **157**, 196
cloning, characterization, and expression (human), **152**, 1289; *erratum*, **155**, 1485
growth hormone-dependent, inhibition and potentiation of IGF-I-stimulated DNA synthesis in dermal fibroblasts (human), **156**, 199
IBP-1, gene structural organization (human), **157**, 898
isolation of biologically active fragment from carboxy terminus (fetal rat), **157**, 718
isolation and NH_2-terminal amino acid sequences (rat serum), **156**, 1187
in serum, recognition by polyclonal antibody to IGF inhibitor (human), **156**, 783
27- to 34-kDa, monoclonal antibodies to, preparation and characterization (human placenta, decidua), **152**, 208
biological activity, receptors, and production (ovine thyroid cells), **154**, 861
Insulin mediators
pyruvate dehydrogenase phosphatase-stimulating, detection of mannose, galactosamine, and D-chiroinositol (rat liver), **151**, 1416
stimulation of cGMP-activated cAMP phosphodiesterase rather than other purified insulin-activated cAMP phosphodiesterases, **156**, 290
Insulin protease
cellular localization with specific monoclonal antibodies (rat liver), **155**, 914
degradation of receptor-bound insulin (rat liver), **150**, 605
Insulin receptors
α subunit, cysteine-rich region, identification as insulin binding site (human), **157**, 321
antibodies
effects on embryo growth and muscle differentiation *in vivo* (chicken), **153**, 142
reversal of insulin-induced negative cooperativity, **150**, 694
associated tyrosine kinase activity
analysis in liver of rats with non-insulin-dependent diabetes, **152**, 1015
modulation by vanadate and monoclonal antibodies to receptor β subunit (human), **152**, 1474
conformational states, effects of insulin binding, **157**, 140
dephosphorylating protein phosphotyrosine phosphatase, identification in hepatic plasma membranes: distinction from alkaline phosphatase (rat), **151**, 633
detection, partial characterization, and function (human platelets), **157**, 1190
distribution in adrenal gland, analysis (rat), **154**, 138
hepatic and muscular, binding of monoiodinated insulins and receptor kinase activation, comparison (rat), **152**, 1353
identification and characterization in *Neurospora crassa* membranes, **155**, 59
and insulin-like growth factor I receptors, associated tyrosine-specific protein kinase activities, characterization with inhibitors (human placenta), **157**, 955
isolation and characterization (rat kidney), **151**, 370
proteolytic activity, analysis (rat liver), **156**, 30
structure and function in adipose tissue, liver, and skeletal muscle, comparison (human), **151**, 123
unprocessed precursors with point mutation at cleavage site, induction of insulin resistance (human), **153**, 657
Interferon α
acceleration of surface differentiation antigen lateral diffusion, measurement by fluorescence photobleaching (Daudi cells), **157**, 808
induced antiviral state, inhibition by neomycin and mimicking by diacylglycerols (human embryonic fibroblasts), **151**, 402
Interferon α1
antiviral activity, critical role of conserved residues arginine 33 and tyrosine 123 (L929 cells), **155**, 714
Interferon α2b
peripheral blood mononuclear cells from treated cutaneous T-cell lymphoma patients, decreased Epstein–Barr virus-induced transformation and elevated 2-5A synthetase and RNase L activity, **153**, 448; *erratum*, **155**, 538
Interferon α/β
inhibition of DNA synthesis in aortic smooth muscle cells (rabbit), **157**, 337
Interferon β
induced antiviral state, inhibition by neomycin and mimicking by diacylglycerols (human embryonic fibroblasts), **151**, 402
inhibition of tumor cell growth, associated modulation of protein kinase C (human), **150**, 126
transcription *in vivo*, modulation by positive and negative cellular factors (human epithelioid 293 cells), **154**, 1338
Interferon β1
human, encoding gene cloned in episomal eucaryotic vector, constitutive and inducible expression (HeLa cells), **157**, 1175
Interferon β_2, *see* Interleukin 6
Interferon γ
activation of voltage-gated calcium channels (RPMI 4788 cells), **153**, 1276
effect on expression of elastase activity (human dermal fibroblasts, synoviocytes; rabbit articular chondrocytes), **155**, 786
expression in *Escherichia coli*, modulation by site-directed mutagenesis (human), **151**, 598
inhibition of
angiogenesis *in vitro* (bovine, human), **155**, 429
granulosa cell differentiation *in vitro* (rat), **157**, 891
tumor cell growth, associated modulation of protein kinase C (human), **150**, 126
natural and recombinant, cellular internalization, comparison (murine fibroblasts), **157**, 109
opposite effects on prostaglandin E_2 release from interleukin-1-stimulated monocytes and fibroblasts (human), **157**, 1197
parallel induction of fibrinolysis and receptors for plasminogen and urokinase in U937 cells, **155**, 418

production by peripheral blood mononuclear cells, effects of anti-tumor polysaccharide schizophyllan (human), **155**, 650
reduction of transferrin receptor expression in WISH cells sensitive to interferon γ antiproliferative effect, **153**, 897
regulation of c-*myc* expression during HL-60 differentiation, role of transcription interruption (human), **151**, 574
signal sequence and N-terminus, derived synthetic nonapeptide, demonstration of 1–3 disulfide bond (human), **157**, 836
and tumor necrosis factor, synergistic cytocidal effect in HT-29 cells, association with inhibition of rRNA processing and (2′,5′)-oligo(A) activation of RNase L (human colon), **151**, 1180
Interferon-α receptors
radiolabeling, **157**, 1264
Interferon-γ receptors
biochemical characterization (mouse), **150**, 1096
Interferons
effects on early platelet-derived growth factor responses in fibroblasts (mouse), **150**, 1207; *erratum*, **151**, 1461
induced gene, downregulating DNA sequence, mapping (human), **156**, 701
recombinant, induction of indoleamine dioxygenase, analysis (murine lung), **152**, 237
Interleukin 1
cell growth-inhibition bioassay, description (human A375 melanoma cells), **154**, 1189
gene expression in acute monocytic leukemia line THP-1, post-transcriptional control (human), **156**, 830
human recombinant, induction of indoleamine dioxygenase, analysis (murine lung), **152**, 237
and IL-1α and 1β mRNA, levels in adult heat-separated epidermis, analysis (human), **156**, 463
induction of
c-*fos* protooncogene expression in cultured umbilical vein endothelial cells (human), **152**, 1104
inositol phospholipid breakdown in macrophages: possible receptor activation mechanism (mouse), **152**, 392
ocular inflammation, inhibition by platelet-activating factor antagonist (rabbit), **154**, 429
protease activity and cartilage proteoglycan degradation, inhibition by transforming growth factor β (rabbit chondrocytes), **157**, 1352
inhibition of cartilage proteoglycan synthesis *in vitro* (pig), **154**, 421
and interleukin 6, effects on serum amyloid A and C-reactive protein synthesis in cultured hepatocytes (human), **155**, 112
and phorbol ester, comparative effects on rheumatoid cell fructose 2,6-bisphosphate levels and prostaglandin E production (human), **150**, 349
stimulated monocytes and fibroblasts, prostaglandin E_2 release, opposite effects of interferon γ (human), **157**, 1197
stimulation of prostaglandin D_2 release from cultured astrocytes (rat), **156**, 882
synthesis by peripheral blood monocytes, inhibition by interleukin 4 via post-transcriptional mechanism (human), **157**, 861
treated synovial cell cultures, peptides from, stimulation of neutrophil cytosolic free calcium levels and locomotion (human), **155**, 1154
and tumor necrosis factor, additive effects on prostacyclin synthesis induction in vascular endothelial cells (human), **156**, 1007
Interleukin 1α
induction of
interleukin 1β gene expression in dermal fibroblasts (human), **156**, 1209
neutrophil chemotactic factor synthesis in endothelial cells (human), **156**, 1340
Interleukin 1β
cysteine residues, structure–function analysis (human), **150**, 1106
effect on
adenylate cyclase activity in 235-1 clonal pituitary cells, **155**, 1089
calcium fluxes in 235-1 clonal pituitary cells, **155**, 1097
expression of elastase activity (human dermal fibroblasts, synoviocytes; rabbit articular chondrocytes), **155**, 786
gene transcription, induction by phorbol ester and inhibition by dexamethasone (U937 cells), **156**, 269
identification in rabbit neutrophils, **150**, 1237
induction of
interleukin 1β gene expression in dermal fibroblasts (human), **156**, 1209
neutrophil chemotactic factor synthesis in endothelial cells (human), **156**, 1340
Interleukin 2
mitogen-induced production and receptor expression in lymphocytes, enhancement by swainsonine (human), **151**, 859
post-translational modification, analysis in T lymphocytes activated by ionophore A23187 and phorbol ester (human), **150**, 97
production by peripheral blood mononuclear cells, effects of anti-tumor polysaccharide schizophyllan (human), **155**, 650
proliferation signal transmission, role of protein kinase C activation (murine CT6, CTLL-2 cells), **154**, 187
recombinant
methionine replacement by norleucine, identification in *Escherichia coli*, **156**, 807
misincorporation of *de novo* synthesized norleucine in *Escherichia coli*, methods for control, **156**, 733
self-association, analysis (human), **152**, 879
Interleukin 3
independent maintenance of multipotent hemopoietic stem cells *in vitro* with ATP, mechanism, **152**, 1173
stimulation of tyrosine kinase in FDC-P1 cells (mouse), **154**, 991
Interleukin 4
inhibition of interleukin 1 synthesis by post-transcriptional mechanism (human monocytes), **157**, 861

Interleukin 6
–B-cell stimulatory factor, IgM synthesis-stimulatory activity, production by endothelial cells (human), **153**, 1045; *erratum*, **157**, 850
fibroblast- and monocyte-secreted forms, phosphorylation (human), **152**, 1144
and interleukin 1, effects on serum amyloid A and C-reactive protein synthesis in cultured hepatocytes (human), **155**, 112
levels in serum of mice bearing methylcholanthrene-induced sarcoma, analysis, **157**, 575
recombinant, assignment of disulfide bonds (mouse), **157**, 364
role in regulation of C-reactive protein and serum amyloid A synthesis in hepatoma cell lines (human), **157**, 271
stimulation of adrenocorticotropic hormone secretion in conscious freely moving rats, **155**, 1459
and tumor necrosis factor and lymphotoxin, mRNA expression patterns, comparison (human peripheral blood mononuclear cells), **153**, 1144
Interleukin-1β receptors
high-affinity, identification in brain (rat), **156**, 61
Interleukin-2 receptors
recombinant soluble, structural analysis (human), **154**, 372
Intestine
apolipoprotein A-I secretion, stimulation by triiodothyronine (rat), **153**, 606
apolipoprotein B secretion, evidence for ApoB-100 as major form (human Caco-2 cells), **156**, 581
colonic glutathione levels, effects of endotoxin (rat), **151**, 844
duodenum
brush border membrane vesicles formed from biopsies, Na^+-dependent concentrative L-leucine and D-glucose uptake (human), **156**, 164
spontaneous phasic contractions, effects of atrial natriuretic factor (rat), **155**, 1437
flora, production of anorexigenic substances (rat), **153**, 1167
407 cells, evidence for expression of primitive intestinal-like alkaline phosphatase, **156**, 563
from hypophosphatasia patients, accumulation of phosphoethanolamine, **154**, 948
ileum, isolated mucosal cells, trophic effects of glucagon-(1–21)-peptide (rat), **152**, 1038
prosomatostatin processing, comparison with brain and pancreas (anglerfish), **151**, 347
Intralipid
application in removal of macrophage cholesterol (mouse), **155**, 709
Iodide
inhibition of iodide binding to proteins: H_2O_2 generation inhibition as cause of Wolff–Chaikoff effect (canine thyroid), **154**, 1287
Iodoacetamide
and *N*-ethylmaleimide, comparative effects on bisphosphoglycerate mutase (human erythrocytes), **153**, 945
p-Iodonitrotetrazolium
reduction by superoxide radicals, analysis, **150**, 1294
Iodothyronine 5′-deiodinase
cDNA nucleotide sequence: homology with protein disulfide isomerase (rat liver), **155**, 1297
evidence for differential physiological modulation during perinatal period (rat brown adipose tissue), **156**, 493
induction by dibutyryl cAMP in cultured astrocytes (rat brain), **151**, 1164
Ion channels
formation in lipid bilayer membrane by enterotoxin of *Clostridium perfringens* type A, **156**, 551
Ionophore A23187
induced protein phosphorylation and serotonin release in platelets, effects of amiloride analogs (human), **154**, 101
and phorbol ester
stimulation of
luminol-dependent photoemission from neutrophils, role of degranulation and myeloperoxidase (human), **155**, 106
T lymphocytes, analysis of interleukin 2 post-translational modification (human), **150**, 97
synergistic inhibition of proteoglycan synthesis in chondrocytes, mechanistic analysis (rabbit), **153**, 690
stimulation of phosphatidylinositol metabolism and prostaglandin E_2 synthesis in lung cancer cells (human), **156**, 644
Ion-pair chromatography
myo-inositol phosphates, **151**, 114
Ion transport
demonstration in hypophysial pars intermedia follicular cell monolayers (bovine), **157**, 1376
Iron
α-crystallin oxidation, production of 43-kDa aggregate composed of A and B chains crosslinked by nonreducible covalent bonds (bovine lens), **157**, 626
dependent lipid peroxidation, stimulation and inhibition by desferrioxamine (rat brain synaptosomes), **153**, 933
dietary overload, effect on
DNA repair in lymphocytes (human, rat), **154**, 698; *erratum*, **156**, 610
mitochondrial porphyrin levels in hexachlorobenzene-induced experimental porphyria (rat liver), **151**, 320
Fe(III)
low-spin site in nitrile hydratase active center, interaction with pyrroloquinoline quinone (*Brevibacterium* R312, *Pseudomonas chlororaphis* B23), **154**, 522
paramagnetic, direct detection in adriamycin-perfused heart (rat), **153**, 275
–molybdenum cofactor of nitrogenase, electron stoichiometry of oxidized/semi-reduced couple, electrochemical determination (*Azotobacter vinelandii*), **152**, 629
–sulfur centers, involved in methanogenic electron transfer, identification (*Methanobacterium thermoautotrophicum*), **153**, 87
uptake by reticulocytes, effect of 4,4′-diisothiocyanostilbene-2,2′-disulfonic acid (rabbit), **150**, 1256

Ischemia
hippocampal CA1 neurons, protection by *S*-adenosyl-L-methionine (rat), **150**, 491
myocardial
effect of inosine as bioenergy recovering factor, analysis by ^{31}P MR spectroscopy (guinea pig), **151**, 1408
induced injury, mechanisms: effect of catecholamines (guinea pig), **150**, 1268
induced mitochondrial dysfunction and leakage of lysosomal enzymes, effects of sodium channel blocker SUN 1165 (dog), **157**, 433
renal, induction of increase in platelet-activating factor production by glomeruli (rat), **152**, 129
Isocitrate lyase
phosphorylation *in vivo* (*Escherichia coli*), **153**, 875
Isoelectric point
lymphocyte pore-forming protein (mouse), **156**, 740
Isoflurane
inhibition of calcium efflux from hepatic mitochondria (rat), **155**, 978
potency, correlation with ^{19}F spin–spin relaxation times in brain and adipose tissues (rat), **151**, 1039
Isopentenyl methylenediphosphonate
and allylic diphosphate moieties, different roles in prenyltransferase reaction, **156**, 396
Isoproterenol
daytime activation of cAMP production in cultured pineal gland, relationship to melatonin production (hamster), **157**, 930
effect on ischemic heart (guinea pig), **150**, 1268
enhancement of junctional conductance in cardiac cell pairs, suppression by cAMP-dependent protein kinase inhibitor (rat), **154**, 509
mediated tyrosine aminotransferase induction in cultured cardiac cells, role of endogenous polyamines (chicken embryo), **152**, 497
stimulated cAMP generation in cardiac myocytes, inhibition by immune cytokine (rat), **150**, 1
(−)Isoproterenol
stimulation of testosterone production, β-adrenergic receptor-mediated, characterization in Leydig's cells (mouse), **151**, 1454
1-(5-Isoquinolinesulfonyl)-2-methylpiperazine
effect on primary, secondary, and cloned cytotoxic T cells (mouse), **154**, 1280
stimulus-dependent inhibition of platelet aggregation (human), **151**, 542
temperature-dependent inhibition of *N*-formyl-methionyl-leucyl-phenylalanine-stimulated superoxide generation in neutrophils (human), **156**, 1376
1-(5-Isoquinolinesulfonyl) piperazine
temperature-dependent inhibition of *N*-formyl-methionyl-leucyl-phenylalanine-stimulated superoxide generation in neutrophils (human), **156**, 1376
Isotope effects
in kinetic distinction between rapid-equilibrium random and abortive ordered enzyme mechanisms, **152**, 406

J

JC virus
human, enhancer containing nuclear factor I-binding sequences, analysis with murine brain nuclear extracts, **157**, 419

K

Kaempferol
effect on tyrosine-specific protein kinase activity of insulin and insulin-like growth factor I receptors (human placenta), **157**, 955
Kallikrein
induction of [hydroxyproline^3]-lysyl-bradykinin release from human plasma protein (ovine pancreas), **150**, 511
Keratinocytes
epidermal growth factor receptor expression, effects of 8-methoxypsoralen and ultraviolet light A (human), **157**, 590
normal and transformed, lateral mobility of plasma membrane lipids, analysis, **152**, 491
7-Ketocholesterol
inhibition of very-low-density lipoprotein secretion by cultured hepatocytes (human, rabbit), **153**, 1116
12-Keto-5,8,10,14-eicosatetraenoic acid
NAD(P)H-dependent reduction to 12(*R*)- and 12(*S*)-hydroxyeicosatetraenoic acids (rat hepatic microsomes), **156**, 1083
Ketones
hydroxyeicosatetraenoic acid-derived, evaluation as lipoxygenase substrates (rat, soybean), **154**, 544
Ketotifen
prevention of terbutaline-induced down-regulation of β-adrenoceptors (guinea pig lung), **152**, 1221
Kidney
angiotensin II-binding proteins, biochemical and immunological properties, comparison with other tissues (rabbit), **156**, 1230
BHK-21 cells, synchronized with aphidicolin, nuclear lamin synthesis (baby hamster), **156**, 205
compensatory growth after unilateral nephrectomy, role of protein kinase C (rat), **152**, 315
control of parathyroid hormone-degrading activity in cultured cells, role of protein kinase C (opossum), **157**, 908
COS cells, expression of human Gγ-globin genes with T or C at position -158 (monkey), **155**, 1213
CV-1 cells, transfected with rat growth hormone gene, expression analysis (African green monkey), **156**, 1166
detection of epidermal growth factor high-affinity binding sites (rabbit), **154**, 312
distal convoluted tubules, glucose-6-phosphate dehydrogenase activity in cytochemical bioassay, effect of human parathyroid hormone-related protein fragment 1–34 (guinea pig), **154**, 146

failure, associated bile acids, analysis: possible bile acid secretion in distal tubule (human), **152**, 197
glomeruli
atrial natriuretic peptide receptor-coupled guanylate cyclase, characterization and regulation by protein kinase C (rat), **157**, 755
prostaglandin E_2 production, modulation by angiotensin II, role of protein kinase C (rat), **152**, 1481
renin release *in vitro*, inhibition by endothelin (rat), **155**, 1244
from hypophosphatasia patients, accumulation of phosphoethanolamine, **154**, 948
ischemic, increased glomerular production of platelet-activating factor (rat), **152**, 129
juxtaglomerular cells in dynamic superfusion system, renin release, inhibition by endothelin (rat), **157**, 1164
MDCK cells, intracellular calcium levels, enhancement by extracellular ATP and UTP (dog), **156**, 1139
phosphate uptake in cultured cells, inhibition by
atrial natriuretic factor, implications for proximal tubules (opossum), **152**, 1416
parathyroid hormone, α_2-adrenergic modulation (opossum), **155**, 74
proximal tubule cells
cyclosporin A transport *in vitro*, inhibition by calcium channel blockers (rabbit), **157**, 1226
epithelial, alterations in intermediate filament proteins *in vitro*, analysis (rat), **157**, 1316
slices, differential uptake of isomeric 2-bromohydroquinone–glutathione conjugates (rat), **152**, 223
293 cells, transfected with full-length β-amyloid protein precursor expression construct, recognition by amino-terminal peptide (human embryo), **156**, 432
Vero cells, viability and macromolecular synthesis, effect of *Clostridium perfringens* type A 8-6 enterotoxin (African green monkey), **151**, 1371
KIH-200
and KIH-201 and -202, effects on mitochondrial ATP synthesis: potent inhibition of P_i transport (rat liver), **155**, 1066
Kinin
release from kininogen and structural analysis (human plasma), **152**, 519
Kininogen
production by hepatoma cells, stimulation by dexamethasone (rat), **154**, 1160
release of kinin: structural analysis (human plasma), **152**, 519
type T
levels in plasma and liver, developmental and sex differences (rat), **150**, 1069
T-kinin-Leu released by cathepsin D of granulomatous tissue, identification (rat), **150**, 1199
Kupffer cells
derived prostaglandin D_2, mediation of glycogenolysis induction in perfused liver by platelet-activating factor (rat), **157**, 1288
release of peptide leukotrienes, analysis (rat), **156**, 217
Kyotorphin
processing in brain, role of calcium-activated neutral protease (rat), **155**, 546

L

Lacrimal gland
extraorbital, melatonin demonstration and experimental manipulation (hamster), **153**, 1186
α-Lactalbumin
demonstration of Ca^{2+}-dependent electrophoretic shift (bovine), **157**, 944
induction suppression, requirement for both progesterone and prolactin (rat mammary explants), **155**, 1038
Lactate
output in perfused liver, leukotriene-induced increase (rat), **151**, 283
–pyruvate ratios in *Neurospora crassa*, regulation by cAMP, **150**, 365
Lactate dehydrogenase
conserved histidine-188 residue, role in allosteric regulation by fructose 1,6-bisphosphate (*Thermus caldophilus*), **152**, 1236
intramolecular motion, monitoring by tryptophan insertion into tryptophan-depleted enzyme (*Bacillus stearothermophilus*), **150**, 752
Lactation
asynchronous dual, analysis of associated milk protein synthesis (tammar wallaby), **154**, 529
Lactobacillus leichmanii
fatty acid-dependent hydrogen peroxide production, **152**, 113
Lactobacillus plantarum
sialic acid synthesis, analysis, **155**, 1126
Lactose synthase
modifier protein α-lactalbumin, demonstration of Ca^{2+}-dependent electrophoretic shift (bovine), **157**, 944
precursor polypeptides, *in vitro* biosynthesis (HeLa cells), **151**, 314
Laminin
cell binding and spreading on, inhibition by lectins (mouse), **156**, 411
Lamins
synthesis in BHK-21 cells synchronized with aphidicolin, analysis, **156**, 205
Lanosterol
levels in CHO-K1 cells, effect of 14α-ethyl-5α-cholest-7-ene-3β,15α-diol, **157**, 359
Lanosterol synthase
partial purification and characterization: evidence for functional thiol residue (porcine liver), **151**, 1378
Larvicides
130-kDa delta-endotoxin, mosquito-specific activity, localization on 72-kDa amino-terminal fragment (*Bacillus thuringiensis*), **153**, 294
Laser irradiation
helium–neon, hepatic mitochondria, enhancement of ADP/ATP exchange (rat), **156**, 978
Lecithin:retinol acyltransferase
demonstration in hepatic microsomes (human, rat), **156**, 157

Lectins
hepatic, sugar-combining sites, number per monomeric unit (rabbit, rat), **155**, 1444
macrophage, specific for galactose/*N*-acetylgalactosamine, homology with hepatic asialoglycoprotein binding protein (rat), **155**, 720
Leishmania mexicana
promastigote to amastigote transformation, associated early and late expression of heat-induced proteins, **156**, 1360
Leucine
intracellular levels and transport, effects of *Clostridium perfringens* enterotoxin, role in macromolecular synthesis inhibition (Vero cells), **153**, 699
transport in lymphocytes, stimulation by concanavalin A, role of calmodulin (human), **153**, 570
L-Leucine
and analog, inhibition of *S*-benzyl-L-cysteine-*p*-nitroanilide-hydrolyzing enzyme (*Escherichia coli*), **153**, 767
and D-glucose, Na^+-dependent concentrative uptake in brush border membrane vesicles formed from duodenal biopsies (human), **156**, 164
Leucine-enkephalin
effect on prostatic carcinoma cell growth, **153**, 722
Leukemia
T-cell, D_β–J_β rearrangement in T-cell receptor β chain loci, analysis: excision of intervening sequence as linear molecule, **152**, 257
Leukocytes
cAMP induction, mediation by adrenocorticotropin receptors (mouse), **157**, 1205
DNA, cloned *hst* gene, transformation of NIH3T3 cells (human), **151**, 965
peripheral blood mononuclear, binding of platelet-activating factor, characterization (human), **155**, 311
proα2(I)collagen gene, nuclear matrix-associated region, location and methylation pattern (human), **157**, 500
Leukotriene A_4
conversion to
leukotriene B_4 by B and T lymphocytes (human), **153**, 203
lipoxins in granulocyte–platelet suspensions (human), **157**, 801
Leukotriene B_4
effect on metabolism and hemodynamics in perfused liver (rat), **151**, 283
formation from leukotriene A_4 by B and T lymphocytes (human), **153**, 203
and platelet-activating factor, differential effects on membrane potential (human endothelial cells, neutrophils), **153**, 805
Leukotriene B_4-coenzyme A ester
formation by hepatic microsomes (rat), **154**, 1248
Leukotriene C_4
induction of increase in glucose and lactate output and decrease in flow in perfused liver (rat), **151**, 283
production by
eosinophils, induction by arachidonic acid in absence of other stimuli (human), **153**, 676
and release from Kupffer cells, analysis (rat), **156**, 217
Leukotriene D_4
induction of
increase in glucose and lactate output and decrease in flow in perfused liver (rat), **151**, 283
signal transduction, inhibition by phorbol ester rapid reversal by staurosporine (U-937 cells), **157**, 521
production and release from Kupffer cells, analysis (rat), **156**, 217
Leukotriene E_4
effect on metabolism and hemodynamics in perfused liver (rat), **151**, 283
production and release from Kupffer cells, analysis (rat), **156**, 217
transamination by cysteine conjugate aminotransferase, analysis (rat), **155**, 1119
Leydig's cells
c-*myc* protooncogene expression, transient activation by human chorionic gonadotropin, **157**, 121
cytochrome $P450_{17\alpha}$, hormonal regulation of mRNA levels and characterization of cDNA fragment (rat), **154**, 151
sterol carrier protein SCP_2 intracellular redistribution after hormonal stimulation, role in pregnenolone production (rat), **154**, 60
testosterone production, stimulatory effects of (−)isoproterenol, β-adrenergic receptor-mediated, characterization (mouse), **151**, 1454
Light
induced phosphoinositide degradation and structural alterations in retina, enhancement by chronic lithium treatment (rat), **156**, 1111
induction of conformational changes in
lysine, detection during primary event of bacteriorhodopsin photocycle (*Halobacterium halobium*), **156**, 86
nitroxide-labeled rhodopsin, electron spin resonance study (bovine), **155**, 1412
near-ultraviolet, induction of growth delay, roles of $tRNA^{Phe}$ and $tRNA^{Pro}$ (*Escherichia coli*), **150**, 979
ultraviolet A, and/or 8-methoxypsoralen, effects on epidermal growth factor receptor expression (human keratinocytes), **157**, 590
Lignin
biodegradation by Mn-dependent peroxidases, role of Mn^{3+}, **157**, 992
Lignin peroxidase
encoding gene, structure and regulation (*Phanerochaete chrysosporium*), **155**, 626; *erratum*, **157**, 417
Limb buds
embryonic, glucose metabolism in culture, parallel effects of insulin-like growth factor II and insulin (mouse), **152**, 359
Linoleate epoxide
synthesis by neutrophil microsomes (dog, guinea pig, human), **152**, 1310
Linoleate hydroperoxide
effect on cytosolic free calcium concentration in cultured aortic endothelial cells (pig), **152**, 301
Linoleic acid
activation of protein kinase C type III-α in pancreatic acinar cells, role in amylase secretion (rat), **153**, 67

and other stimuli, induced platelet aggregation, stimulus-dependent inhibition by protein kinase C inhibitors (human), **151**, 542
uptake and distribution in HL-60 cells, effect of phorbol ester, **157**, 639
Linoleic acid hydroperoxide
soybean lipoxygenase-catalyzed oxidations: different reducing substrates and dehydrogenation of phenidone and BW 755C, **151**, 339
Linolelaidic acid
and other stimuli, induced platelet aggregation, stimulus-dependent inhibition by protein kinase C inhibitors (human), **151**, 542
Linolenic acid
effect on activation of protein kinase C in pancreatic acinar cells (rat), **153**, 67
γ-Linolenic acid
enriched diet, alteration of cutaneous eicosanoids (guinea pig), **154**, 967
stimulation of superoxide formation in tumor cells, role in specific cytotoxicity mechanism and applicability as model for tumor necrosis factor (mouse), **155**, 1033
Lipase, *see* Triacylglycerol lipase
Lipid A
activation of protein kinase C from B cells (mouse), **152**, 149
Lipids
associated and covalently bound, role in salivary mucin hydrophobicity: effect of proteolysis and disulfide bridge reduction (rat), **151**, 1046
inositol-containing, breakdown during T-lymphocyte mitogenesis, role of guanine nucleotide-binding proteins in coupling to cell-surface receptors (human), **148**, 1223; *erratum*, **150**, 1315
peroxidation
catalysis by glycosylated collagen and glucose, **151**, 649
inhibition of norepinephrine-stimulated lipolysis in adipocytes, associated decrease in β-adrenergic receptors (rat epididymis), **150**, 802
mediation of DNA damage (rat liver mitochondria), **153**, 191
planar bilayers, incorporation of partially purified sarcolemmal Ca^{2+} channels (bovine heart), **152**, 1255
plasma membrane, lateral mobility, analysis in normal and transformed keratinocytes, **152**, 491
synaptosomal, iron-dependent peroxidation, stimulation and inhibition by desferrioxamine (rat brain), **153**, 933
Lipoamide
reduction of thioredoxin fragment 31–36 (*Escherichia coli*), **150**, 156
Lipocortin
and prostaglandin, production in amnion cells, stimulation by dexamethasone (human), **151**, 137
related proteins
from murine lung, inhibition of phospholipase A_2 activity of guinea pig alveolar macrophages, **153**, 1267
rapid purification from lung (mouse), **153**, 1271
and related proteins, anticoagulant activity, evaluation, **150**, 972
Lipogenesis
and glucose utilization, pathways in lactating mammary gland *in vitro*, comparative effects of insulin and proinsulin (rat), **154**, 443
Lipolysis
catecholamine-induced, enhancement by dexamethasone: direct *in vitro* effects on β-adrenoreceptor-coupled adenylate cyclase system (rat adipocytes), **153**, 489
effect of phorbol ester, relationship to insulin action (rat adipocytes), **154**, 171
norepinephrine-stimulated, in adipocytes, inhibition by lipid peroxidation, associated decrease in β-adrenergic receptors (rat epididymis), **150**, 802
in white fat cells, estrogen enhancement, role of increased adenylate cyclase catalytic activity (rat), **154**, 1151
Lipophorin
binding to free fatty acids in hemolymph, analysis (*Triatoma infestans*), **157**, 465
Lipophosphoglycans
cell-surface, identification in *Trypanosoma brucei brucei* variants, **153**, 1257
Lipopolysaccharides
polysaccharide chain, effects in experimental murine hepatic cell necrosis model (*Salmonella minnesota*), **155**, 1305
stimulation of
prostaglandin D_2 release from cultured astrocytes (rat), **156**, 882
T-cell proliferation, inhibition by calcitonin gene-related peptide (mouse), **154**, 227
Lipoprotein lipase
deficiency, relationship to cyclophosphamide-induced very-low-density lipoprotein accumulation (rabbit), **154**, 633
secretion in adipose cells, short-term stimulation by insulin (mouse, rat), **154**, 982
Lipoprotein receptors
low-density-lipoprotein, encoding gene upstream promoter, absence of cAMP response element (human), **152**, 143
Lipoproteins
high-density
binding by apolipoprotein A-I, effect of apo A-I nonenzymatic glycation (human), **153**, 1060
effect of fish oils (rat plasma), **150**, 1063
isolation from lamprey, mammalian, and piscine sera with Cibacron Blue and anilinonaphthalenesulfonate, **154**, 752
low-density
catabolism, reduction by cAMP (human hepatoma cells), **156**, 424
effect of fish oils (rat plasma), **150**, 1063
placental, isolation and characterization (human), **153**, 502
secretion by monocyte-derived macrophages (human), **154**, 572
very-low-density
cyclophosphamide-induced accumulation, relationship to lipoprotein lipase deficiency (rabbit), **154**, 633
secretion by cultured hepatocytes, inhibition by 7-ketocholesterol (human, rabbit), **153**, 1116

Liposomes
cardiac calcium channels reconstituted into, calcium efflux, measurement with fura-2 (bovine), **154**, 1067
dipalmitoylphosphatidylcholine, gel phase, hydrolysis by phospholipase A_2, induction of latency period in time course, **151**, 851
integration of yeast mitochondrial complex III, restoration of high-potential cytochrome b_{564}, **152**, 981
lecithin, fluidity, effect of vitamin E, **150**, 469; *erratum*, **151**, 631
reconstitution of
adenosine 3′-phosphate 5′-phosphosulfate (rat brain), **155**, 1271
cardiac gap junction channeling activity, analysis by functional assay (chicken), **154**, 194
targeting to brain with mannose as recognition marker (mouse), **153**, 1038
Lipoxins
A and B isomers, soybean lipoxygenase-catalyzed formation from arachidonic acid via 5,15-dihydroperoxyeicosatetraenoic acid, **153**, 840
generation by alveolar macrophages (rat), **150**, 870; *erratum*, **152**, 1511
transcellular formation from endogenous arachidonic acid in mixed platelet–granulocyte suspensions (human), **157**, 801
Lipoxygenase
catalyzed oxidations by linoleic acid hydroperoxide: different reducing substrates and dehydrogenation of phenidone and BW 755C (soybean), **151**, 339
conversion of arachidonic acid to lipoxin A and B isomers via 5,15-dihydroperoxyeicosatetraenoic acid (soybean), **153**, 840
hydroperoxidase activity, analysis: hydrogen peroxide-dependent oxidation of xenobiotics (soybean), **155**, 1075
ketones of hydroxyeicosatetraenoic acids as substrates, evaluation (rat, soybean), **154**, 544
5-Lipoxygenase
inhibition by 15-hydroperoxyeicosatetraenoic acid and related eicosanoids (human leukocytes), **155**, 38
isolation and characterization (tulip bulb), **157**, 1348
15-Lipoxygenase
molecular cloning and primary structure (human reticulocytes), **157**, 457
Lithium
enhancement of light-induced phosphoinositide degradation and structural alterations in retina after chronic administration (rat), **156**, 1111
Lithocholic acid
hydroxylation, conjugation, and sulfation in primary monolayer cultures of hepatocytes (rat), **154**, 1114
Liver, *see also* Hepatocytes
angiotensin II-binding proteins, biochemical and immunological properties, comparison with other tissues (rabbit, rat), **156**, 1230
Ca^{2+}-activated phospholipid-dependent protein kinase isoenzymic forms, identification (guinea pig, mouse, rabbit, rat), **155**, 1017
centrilobular region, expression of ethanol-indudible cytochrome P450 (rat), **157**, 55
cholesterol biosynthesis, regulation by fatty acids: effect of dietary olive oil on cytoplasmic acetoacyl-CoA thiolase, β-hydroxy-β-methylglutaryl-CoA synthase, and acetoacetyl-CoA ligase (rat), **153**, 422
codeine bioactivation, mediation by polymorphic monooxygenase catalyzing debrisoquine 4-hydroxylation (human), **152**, 411
distribution of fructose 6-phosphate,2-kinase:fructose-2,6-bisphosphatase isozymes, analysis (bovine, rat), **157**, 949
DNA synthesis, stimulation by tumor necrosis factor *in vivo* (rat), **153**, 576
fat-storing cells, hyaluronic acid synthesis and secretion *in vitro* (rat), **151**, 222
fatty acid oxidation, inhibition by bezafibrate and bezafibroyl CoA (rat), **157**, 1148
D-galactosamine treatment, partial purification and characterization of hepatocyte proliferation stimulatory factor (rat), **150**, 133
glucosylceramide levels in Gaucher disease model, normalization by phosphatidylserine injection (mouse), **152**, 155
glutathione peroxidase mRNA levels, effect of selenium status (rat), **153**, 855
[^{3}H]dehydroepiandrosterone binding, physicochemical characterization (rat), **156**, 22
heme oxygenase gene expression, developmental analysis (human, rat), **150**, 717
and hepatoma cells, Ca^{2+} sensitivity of mitochondrial NAD^+-isocitrate dehydrogenase and 2-oxoglutarate dehydrogenase (rat), **157**, 1218
homogenate, microsomal fraction, 15-hydroxyeicosatetraenoic acid dehydrogenase assay (mouse), **156**, 524
hormonally induced Ca^{2+} influx, inhibition by exposure to depolarizing concentrations of K^+ (rat), **153**, 1282
from hypophosphatasia patients, accumulation of phosphoethanolamine, **154**, 948
identification of L-pipecolate oxidase: deficiency in Zellweger syndrome (human), **154**, 33
insulin-degrading enzyme, cellular localization with specific monoclonal antibodies (rat), **155**, 914
insulin receptors
binding of monoiodinated insulins and receptor kinase activation, comparison with skeletal muscle receptors (rat), **152**, 1353
structure and function, comparison with adipose tissue and muscle forms (human), **151**, 123
lecithin:retinol acyltransferase, demonstration in microsomal preparations (human, rat), **156**, 157
lobule, periportal and pericentral regions, isolation of fresh hepatocytes (rat), **155**, 455
1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine metabolism, *in vivo* analysis (rat), **152**, 1339
mRNAs for serum amyloid P-component, C-reactive protein, and prealbumin, acute-phase response (mouse), **155**, 554
multifunctional protein kinase Ca^{2+}/CaM-dependent isoenzymes (rabbit, rat), **151**, 1332

near-total conversion of pancreas to: model for transdifferentiation studies (adult rat), **156**, 131
necrosis induced by thioacetamide, role of lysophosphatidylcholine (rat), **154**, 803
normal and fibrotic, synthesis of free and small peptide-bound hydroxyproline (rat), **151**, 1128
perfused
glycogenolysis induction by platelet-activating factor, mediation by prostaglandin D_2 from Kupffer cells (rat), **157**, 1288
hypoxic damage, generation of reactive oxygen species (rat), **150**, 568
output of glucose and lactate and flow, effects of leukotrienes (rat), **151**, 283
and plasma, T-kininogen levels, developmental and sexual differences (rat), **150**, 1069
protein S mRNA synthesis, identification of PSα gene as synthesis site (human), **157**, 1033
proteins with senescence biomarker potential, identification: role of carbonic anhydrase III (rat), **154**, 1130
regenerating
expression of epidermal growth factor receptor proto-oncogene mRNA (rat), **150**, 412
and primary cell culture, associated expression of insulinoma gene *rig* (rat), **150**, 1302
protein kinase C serial change, analysis (rat), **151**, 1144
selenium-deficient, diminished expression of glutathione peroxidase mRNA (rat), **154**, 1024
vasopressin V1 receptors, differential coupling to guanine nucleotide-binding proteins (bovine, rat), **151**, 1293
Lormetazepam
natural, increase during germination (potato), **157**, 1436
Lovastatin
dietary, stimulation of hepatic mitochondrial outer carnitine palmitoyltransferase (rat), **150**, 1077
induction of transient hypertriglyceridemia (hamster), **157**, 530
Luciferase
subunits, homology with *lux*F gene-encoded protein (*Photobacterium phosphoreum*), **155**, 351
Luminol
dependent photoemission, stimulation by phorbol ester and ionophore A23187, role of degranulation and myeloperoxidase (human neutrophils), **155**, 106
enhanced chemiluminescence, in specificity and efficiency assessment of oxygen radical scavengers, **150**, 39
Lung
cellular retinol-binding protein mRNA levels, retinoic acid-induced increase in retinol-deficient rats, **156**, 712
formation of 14,15-oxido-5,8,11-eicosatrienoic acid from phosphatidylinositol in extracts, demonstration of endogenous inhibitors (bovine), **155**, 823
Lupus obstetric syndrome
plasma anticardiolipin antibodies and lupus anticoagulant, separation on phospholipid-coated polystyrene column (human), **155**, 1001
Luteinizing hormone
and cytosolic Ca^{2+}, biphasic activation by gonadotropin-releasing hormone *in vitro* (rat pituitary), **154**, 398
and follicle-stimulating hormone, β-subunit mRNAs, colocalization by *in situ* hybridization with biotinylated probes (porcine anterior pituitary), **154**, 80
induction of superoxide dismutase in ovary, analysis (rat), **157**, 146
regional distribution in anterior pituitary, age-related changes (male rat), **152**, 1213
stimulation of
DNA synthesis in cultured renal cortical cells (rat), **150**, 506
Leydig's cells, associated sterol carrier protein SCP_2 intracellular redistribution, role in pregnenolone production (rat), **154**, 60
subunit synthesis in cultured pituitary cells, time course, effect of gonadotropin-releasing hormone (rat), **153**, 664
Luteinizing hormone receptors
expression by granulosa cells
modulation by erythroid differentiation factor (rat), **153**, 281
regulation by fibroblast growth factor (rat), **156**, 634
Luteinizing hormone-releasing hormone
biphasic activation of cytosolic Ca^{2+} and luteinizing hormone responses in pituitary cells *in vitro* (rat), **154**, 398
desensitization of pituitary gonadotropes after pretreatment (rat), **153**, 919
desensitized pituitary cells, stimulation of FSH secretion by activin (rat), **151**, 1099
effect on time course of lutropin subunit synthesis in cultured pituitary cells (rat), **153**, 664
Luteinizing hormone-releasing hormone receptors
detection in uterine leiomyoma (human), **152**, 1326
Lutropin, *see* Luteinizing hormone
Lymphoblasts
DNA transfection by electropermeation with square shaped electric impulsions (human), **151**, 982
IM-9, processing of substance P receptor: biosynthetic and degradation studies with monoclonal anti-receptor antibody (human), **151**, 535
T-cell, CEM-ON, macrophage colony-stimulating factor purification and characterization (human), **152**, 1401
Lymphocytes
B-cell, conversion of leukotriene A_4 into leukotriene B_4 (human tonsils), **153**, 203
blastogenesis, induction by periodic acid, role of phosphoinositide turnover (rat), **154**, 606
CD4-positive, HIV-1 infected, augmentation and stable expression of transcription factor S II (human), **155**, 1346
cultures, support by feeder cells, mechanism, **150**, 1037
cytotoxic T-cell, effects of protein kinase C inhibitors on primary, secondary, and cloned cells (mouse), **154**, 1280
derived neutrophil activating peptide, structure determination (human), **151**, 883
DNA repair, effect of chronic iron overload (human, rat), **154**, 698; *erratum*, **156**, 610
DNA synthesis, stimulation by swainsonine (mouse), **150**, 615

Epstein–Barr virus-transformed, establishment and growth, effect of carboxyethyl γ-aminobutyric acid (human), **150**, 931
leucine transport, stimulation by concanavalin A, role of calmodulin (human), **153**, 570
mitogen-activated
DNA polymerase activity, analysis (bovine), **153**, 1324
interleukin 2 production and receptor expression, enhancement by swainsonine (human), **151**, 859
natural killer cell activity and antibody-dependent cell-mediated cytotoxicity, inhibition by chlorpromazine (human), **155**, 597
peripheral blood, DNA repair and mitogen-stimulated growth, effects of azidothymidine (human), **157**, 1369
phytohemagglutinin-activated, protein kinase C kinetics, effects of anti-HLA class I monoclonal antibodies (human peripheral blood), **156**, 46
pore-forming protein, primary sequence and isoelectric point determination (mouse), **156**, 740
proliferation
concanavalin A-induced, enhancement by 1,25-dihydroxyvitamin D_3, requirement of monocytes (bovine), **152**, 545
inhibition by
monoclonal antibodies to HLA class I antigens without affecting mitogen-dependent second messenger generation (human), **154**, 712
synthetic peptides homologous to human plasma apolipoproteins B and E (mouse), **154**, 741
T-cell
activation by ionophore A23187 and phorbol ester, analysis of interleukin 2 post-translational modification (human), **150**, 97
$CD4^+$, prostaglandin E_2-induced cAMP accumulation, enhancement during CD2-mediated activation (human), **157**, 1396
conversion of leukotriene A_4 into leukotriene B_4 (human peripheral blood), **153**, 203
2′,3′-dideoxyadenosine metabolism, biochemical and genetic analysis (human), **151**, 788
human T-cell lymphotropic virus type I-infected, expression of parathyroid hormone-related protein (human), **154**, 1182
inositol lipid breakdown during mitogenesis, role of guanine nucleotide-binding proteins in coupling to cell-surface receptors (human), **148**, 1223; *erratum*, **150**, 1315
lectin-stimulated, poly(ADP-ribose) polymerase gene induction, role of protein synthesis (human), **156**, 995; *erratum*, **157**, 1445
mitogen-induced proliferation, inhibition by
5-azacytidine and cytosine-arabinoside, comparison (rat), **151**, 548
calcitonin gene-related peptide (mouse), **154**, 227
phytohemagglutinin-activated, protein kinase C depletion by anti-HLA class I monoclonal antibodies (human), **152**, 951
viability and proliferative response to activating agents, effect of 5-azacytidine (human blood), **151**, 1395
T-cell receptor α, β, and γ gene rearrangements, relationship to Jα region involved in c-*myc*/Jα translocation (human lymphoma), **154**, 550
Lymphotoxin
inhibition of angiogenesis *in vitro* (bovine, human), **155**, 429
and tumor necrosis factor and interleukin 6, mRNA expression patterns, comparison (human peripheral blood mononuclear cells), **153**, 1144
Lypressin
and arginine vasopressin, and mesotocin and oxytocin, identification in single neurohypophysis in marsupial (*Isodon macrourus*), **154**, 346
Lysine
active-site, in estradiol 17β-dehydrogenase, chemical modification (human placenta), **152**, 789
carboxy-terminal, α_2-antiplasmin, role in interaction with plasmin, **155**, 591
in growth hormone, acetylation, effect on affinity for somatogenic receptors (human), **150**, 391
light-induced conformational changes, detection during primary event of bacteriorhodopsin photocycle (*Halobacterium halobium*), **156**, 86
in position 29 of human β-endorphin, identification as acyl acceptor site during transglutaminase-mediated modification, **154**, 735
residue 368, associated trimethylation mutant porcine citrate synthase expressed in and isolated from *Escherichia coli*, characterization, **157**, 1231
Lysine–tRNA ligase
isolation from liver (rat), **152**, 593
Lysine vasopressin, *see* Lypressin
Lysophosphatidylcholine
role in thioacetamide-induced hepatic necrosis (rat), **154**, 803
Lysophosphatidylinositol
production in dorsal root ganglion × neurotumor hybrid cells, induction by bradykinin, **152**, 724
Lysosomes
in cultured fibroblasts from patients with infantile generalized *N*-acetylneuraminic acid storage disease, impaired proteolytic processing of *N*-acetyl-β-hexosaminidase, **152**, 83
degradation of aspartate aminotransferase (rat liver), **157**, 440
fusion with autophagic vacuoles and endosomes, prior convergence of autophagic and endocytic pathways (rat hepatocytes), **151**, 40
splenic, K^+-dependent proton efflux and depolarization (mouse, rat), **156**, 211
Lysozyme
bacteriophage T4, synthetic, mutation of active site residues, effect on lytic activity, **153**, 862
cDNA sequencing and expression and secretion by yeast (human placenta), **150**, 794
egg-white, kinetics in low water activity media: hydration memory phenomenon, **155**, 816
folding and secretion in yeast, role of disulfide bonds (human), **152**, 962
ischemia-induced enzyme leakage, effects of sodium chan-

nel blocker SUN 1165 (canine heart), **157**, 433
Lysyl-tRNA synthetase, *see* Lysine–tRNA ligase

M

α_2-Macroglobulin
–viral protein conjugates, increased uptake by macrophages, stimulation of antibody production to viral proteins (mouse), **150**, 883; *erratum*, **151**, 955
Macrophages
alveolar
activated, free arachidonic acid production, inhibition by calmodulin antagonists (rabbit), **156**, 947
generation of lipoxins (rat), **150**, 870; *erratum*, **152**, 1511
arachidonic acid metabolism, modulation by 15-hydroxyeicosatrienoic acid (mouse), **153**, 799
bone marrow-derived, superoxide anion release, effects of zymosan and phorbol ester (rat), **151**, 641
cholesterol removal by triglyceride–phospholipid emulsions (mouse), **155**, 709
cytotoxic activated, nitric oxide as molecular effector (mouse), **157**, 87
derived angiogenic activity in rat corneal bioassay, inhibition by anti-rheumatic agents gold sodium thiomalate and auranofin (mouse), **154**, 205
interleukin-1-induced inositol phospholipid breakdown: possible receptor activation mechanism (mouse), **152**, 392
lectin specific for galactose/*N*-acetylgalactosamine, homology with hepatic asialoglycoprotein binding protein (rat), **155**, 720
monocyte-derived
production of active oxygen species in culture, stimulation by platelet-activating factor (human), **156**, 1293
secretion of lipoprotein (human), **154**, 572
peritoneal
binding of inositol 1,4,5-trisphosphate, characterization (guinea pig), **155**, 1173
tumor necrosis factor-α production by pentoxifylline, cellular and molecular regulation (mouse), **155**, 1230
uptake of α_2-macroglobulin–viral protein conjugates, stimulation of antibody production to viral proteins (mouse), **150**, 883
yeast phagocytosis *in vitro*, suppression by dexamethasone, associated inhibition of arachidonic acid release from phosphatidylcholine (mouse), **153**, 583
Magnesium
–GDP complex of c-Ha-*ras* oncogene product P21, ^{1}H NMR study, **150**, 444
induction of
conformational change in actin: structural relationship between antigenic epitopes and cation exchange (rabbit, scallop), **152**, 368
fast disassembly of microtubules (bovine brain), **155**, 1464
Malaria
chloroquine resistance, reversal independent of calcium channels (human), **155**, 476
synthetic vaccines, construction of immunogens for (mouse), **153**, 31
4-Maleimido-2,2,6,6-tetramethylpiperidine-*N*-oxyl
spin-label for electron spin resonance study of light-induced conformational changes in rhodopsin, sensitivity evaluation (bovine), **155**, 1412
Malic enzyme
mRNA, insulin-mediated post-transcriptional regulation (rat liver), **154**, 1081
Maltohexaose
producing amylase, encoding gene from alkalophilic *Bacillus* sp. #707, nucleotide sequence and structural similarity to liquefying-type α-amylases, **151**, 25
Mammary gland
lactating, glucose utilization and lipid synthesis pathways *in vitro*, comparative effects of insulin and proinsulin (rat), **154**, 443
receptor binding and mitogenic activities of glycosylated and unglycosylated prolactin, comparison (pig, rabbit), **155**, 1187
suppression of α-lactalbumin induction in explants, requirement for both progesterone and prolactin (rat), **155**, 1038
Manganese
role in lignin biodegradation by Mn-dependent peroxidases (*Lentinula edodes*), **157**, 992
Mannan
binding to myeloperoxidase, role in enzyme fungicidal activity (*Candida albicans*), **154**, 809
Mannose
application as recognition marker in liposome targeting to brain (mouse), **153**, 1038
detection in insulin mediator stimulating pyruvate dehydrogenase phosphatase (rat liver), **151**, 1416
Mannose 6-phosphate
enhancement of insulin-like growth factor II receptor affinity by displacement of inhibitory endogenous ligands (human, rat), **157**, 632
and insulin-like growth factor II
detection of distinct binding sites (human fibroblasts, liver), **150**, 1287
simultaneous binding to hepatic M6P/IGF-II receptor (human), **152**, 1248
Mass spectrometry
sterol carrier protein SCP_2 (rat liver), **154**, 476
Mast cells
secretory granules, synthesis of prostaglandins and eicosanoids (rat), **156**, 1308
Medroxyprogesterone acetate
regulation of epidermal growth factor receptor mRNA levels in T-47D breast cancer cells (human), **150**, 192
Melanin
synthesis, effects of retinoic acid in B16 melanoma cell variants (mouse), **155**, 773
α-Melanotropin
secretion by intermediate pituitary cells, effect of atrial natriuretic factor (rat), **155**, 83
β-Melanotropin
effect on tyrosinase gene expression (murine melanoma cells), **153**, 1301

Melatonin
in extraorbital lacrimal gland, demonstration and experimental manipulation (Syrian hamster), **153**, 1186
production in cultured pineal gland
relationship to daytime cAMP production activation by forskolin or isoproterenol (hamster), **157**, 930
stimulation by forskolin during late dark period (hamster), **155**, 209
Membrane potential
differential effects of leukotriene B_4 and platelet-activating factor (human endothelial cells, neutrophils), **153**, 805
Membranes
aortic, [^{3}H]propionyl-neuropeptide specific binding, characterization: comparisons with binding in rat brain and biological responses in rat vas deferens, **151**, 1213
basolateral, Ca^{2+},Mg^{2+}-ATPase activity, stimulation by parathyroid hormone, role of cAMP-dependent membrane phosphorylation (canine kidney), **150**, 263
platelet-derived growth factor via specific receptor (canine kidney), **153**, 1315
biological, incorporation into giant proteoliposomes by freezing–thawing without detergent: reconstitution for analysis by patch-clamp pipette microelectrode (rabbit, rat), **154**, 85
brush border
fluidity and glucose and phosphate transport, effects of various forms of vitamin D (rat kidney), **150**, 1193
Na^+/H^+ antiport, molecular size estimation by radiation inactivation (rat kidney), **152**, 484
Na^+/H^+ exchanger, inhibition and labeling by antagonist of muscarinic acetylcholine receptors (rat kidney), **157**, 921
Na^+/P_i cotransport, potent selective inhibition by α-Cl-α-Br-phosphonoacetic acid (rat renal cortex), **153**, 1152
partial purification of alanine carrier, subsequent functional reconstitution into proteoliposomes (rabbit intestine), **152**, 1158
vesicles formed from duodenal biopsies, Na^+-dependent concentrative L-leucine and D-glucose uptake (human), **156**, 164
cellular, vesicles, glutamate uptake analysis (*Halobacterium halobium*), **152**, 1090
cerebral
opioid binding, inhibition by monoclonal antibodies to opioid receptors (rat), **154**, 688
synaptic, *N*-methyl-D-aspartic acid-sensitive [^{3}H]glutamate binding sites, disclosure by Triton X-100, **153**, 510
diacylglycerol kinase translocation from cytosol, decrease in *ras*-transformed cells (mouse), **154**, 959
erythrocyte, permeation by 2′,3′-dideoxythymidine by nonfacilitated diffusion (human), **154**, 825
fluidity in clavine-producing *Claviceps purpurea* strains, effect of clomiphene, **152**, 190
hepatocyte, outer surface, localization of insulin-sensitive phosphatidylinositol-glycan (rat), **152**, 1455
inner–outer junctions, localization of *fts*A–*lac*Z-encoded fusion proteins (*Escherichia coli*), **152**, 1023
intercalated spin probe, ESR spectra in monitoring reaction rates of partitioning compounds: hydrolysis of local anesthetic analog, **152**, 344
K^+ transport, reconstitution with 53-kDa mitochondrial protein (rat liver), **153**, 224
lipid bilayer, ion-permeable channels, formation by enterotoxin of *Clostridium perfringens* type A, **156**, 551
mammalian cell, immunochemical detection of α-subunit of G protein G_z, **157**, 883
microsomal
phase transitions, assessment by quick-freeze differential scanning calorimetry and saturation transfer electron spin resonance (tomato), **153**, 104
and plasma, insulin-mediated translocation of glucose transporters: sole mechanism of glucose transport stimulation in L6 muscle cells, **157**, 1329
specific guanine nucleotide binding, demonstration (*Cucurbita pepo* seedlings), **155**, 1478
mitochondrial, permeability, Ca^{2+}-dependent $NAD(P)^+$-induced alterations (rat hepatoma, liver), **154**, 934
multipotent hemopoietic stem cell, ATP-mediated permeabilization: cell maintenance *in vitro* in absence of interleukin 3, **152**, 1173
Na^+/H^+ antiport, role in ornithine decarboxylase induction by L-asparagine (rat hepatoma cells), **155**, 937
nuclear
deficient CHO cells, intracellular transport of vesicular stomatitis virus G protein, **152**, 469
histone-1-like antigen identification as component (HEp-2 cells), **156**, 675
outer, small diffusion pores, demonstration by rate assay (*Pseudomonas aeruginosa*), **156**, 470
pancreatic zymogen granule, major integral protein GP-2, covalent anchorage to phosphatidylinositol (pig, rat), **154**, 818
phospholipid, inserted protein kinase C, constitutive activity, **152**, 336
plasma, *see* Plasma membranes
polyvinyldifluoride, proteins electroblotted to, internal amino acid sequence determination by *in situ* cyanogen bromide cleavage method, **155**, 1353
protein kinase C association, induction by protein kinase inhibitor staurosporine (human erythrocytes), **154**, 1273
protein translocation, implications of consensus sequences resembling metal-binding domains in N-terminus of exported proteins, **156**, 99
renal, detection of epidermal growth factor high-affinity binding sites (rabbit), **154**, 312
striatal
D_2 dopamine receptors, immuno-photoaffinity labeling (bovine), **155**, 930
purification of D_2 dopamine receptors (bovine), **156**, 602
Mercury
inhibition of *N*-methyl-*N*-nitrosourea induction of adaptive response (*Escherichia coli*), **157**, 1124
Mesangial cells
mitogenesis *in vitro*, inhibition by atrial natriuretic factor

(rat), **152**, 893
Mesotocin
and oxytocin, and arginine and lysine vasopressins, identification in single neurohypophysis in marsupial (*Isodon macrourus*), **154**, 346
Metalloendopeptidase
membrane-bound, acidic, cleavage of 140-kDa atrial natriuretic factor receptor (bovine adrenal cortex), **152**, 658
Metallopeptidase
soluble, isolated from ventricular myocytes, degradation of ^{125}I-atrial natriuretic peptide (rat), **152**, 294
Metalloporphyrins
inhibition of renal heme oxygenase (human), **157**, 480
Metalloproteinase
92-kDa, *ras* oncogene-mediated induction in transfected NIH/3T3 and human tumor cell lines: association with malignant phenotype, **154**, 832
Metalloproteinase inhibitor
gene cloning and expression (*Streptomyces nigrescens*), **155**, 487; *erratum*, **156**, 1419
Metallothionein
copper-saturated, and dopamine β-monooxygenase, bidirectional transfer of copper, **153**, 558
mammalian, seed-transmissable expression in transgenic tobacco, **150**, 640
synthesis, mediation of endotoxin-induced zinc accumulation by hepatocytes *in vitro*, **152**, 874
type I, encoding gene, cloning, nucleotide sequence, and characterization (rabbit), **153**, 209
type II
pseudogene, cloning, nucleotide sequence, and molecular evolution (rabbit), **156**, 1403
suppression of stress- and HCl–ethanol-induced gastric ulcer after intravenous administration (rat), **151**, 725
Metals
binding domains, related consensus sequences in N-terminus of exported proteins, identification: implications for protein translocation across membranes, **156**, 99
ionic, effects on *N*-methyl-*N*-nitrosourea-induced adaptive response (*Escherichia coli*), **157**, 1124
trace, porphyrinogenic, reversal of glutathione-mediated attenuation of porphyrinogen oxidation *in vitro*, **152**, 1428
Metastasis
colonic carcinoma cell lines, associated gelatinases, detection and characterization (mouse), **151**, 158
Methane monooxygenase
high-specific-activity hydroxylase component, purification from type II methanotroph (*Methylosinus trichosporium*), **154**, 165
Methanobacterium thermoautotrophicum
methanogenic electron transfer, associated iron–sulfur centers, identification, **153**, 87
Methenyltetrahydrofolate cyclohydrolase
–methylenetetrahydrofolate dehydrogenase (NAD^+), detection in mitochondria of transformed cells (mouse), **155**, 1
Methionine
replacement by norleucine, identification in recombinant interleukin 2 produced by *Escherichia coli*, **156**, 807
^{35}S-labeled, *in vivo* interaction with DNA, effects of chemical carcinogens (rat liver), **157**, 373
Methotrexate
disulfide-linked anti-transferrin receptor conjugate, cytotoxicity enhancement by monensin (human), **150**, 104
Methoxatin
free and bound, amplified detection with nitroblue tetrazolium redox reactions: analysis of pyrroloquinoline quinone locus in quinoproteins, **154**, 1330
Methoxsalen
and/or ultraviolet light A, effects on epidermal growth factor receptor expression (human keratinocytes), **157**, 590
3-Methoxy-4-aminoazobenzene
mutagenic activation, mediation by male-specific renal cytochrome P450 isozyme (mouse), **152**, 843
Methoxyflurane
potency, correlation with ^{19}F spin–spin relaxation times in brain and adipose tissues (rat), **151**, 1039
(±)-*trans*-2-(3-Methoxy-5-methylsulfonyl-4-propoxyphenyl)-5-(3,4,5-trimethoxyphenyl)tetrahydrofuran
synthesis and biological properties, **150**, 1213; *erratum*, **152**, 949
8-Methoxypsoralen, *see* Methoxsalen
3-Methyladenine-DNA glycosylase II
induction of 7-alkylguanine release from haloethylnitrosourea-treated DNA (*Escherichia coli*), **155**, 1261
N-[2-(Methylamino) ethyl]-5-isoquinolinesulfonamide dihydrochloride
effect on primary, secondary, and cloned cytotoxic T cells (mouse), **154**, 1280
N-Methyl-D-aspartic acid
sensitive [^{3}H]glutamate binding sites in brain synaptic membranes, disclosure by Triton X-100, **153**, 510
Methylation
albumin and IgE genes by *N*-nitrosodimethylamine, comparison (rat liver), **155**, 14
calmodulin-stimulated, proteins in hepatic cytosol *in vitro*, identification of glutathione *S*-transferase as substrate and glutathione as inhibitor (rat), **156**, 368
DNA, decrease in ethionine-induced preneoplastic nodules (rat hepatocytes), **150**, 739
hypo-, DNA in gastric fundic mucosa, role in expression of pepsinogen A genes (human), **151**, 275
proα2(I)collagen gene nuclear matrix-associated region in fibroblasts and leukocytes, comparison (human), **157**, 500
stoichiometric, chromogranins from bovine adrenal medullary cells, **152**, 732
Methylcholanthrene
induced sarcoma, serum levels of hybridoma growth factor/interleukin 6 in affected mice, **157**, 575
3′-Methyl-4-dimethylaminoazobenzene
induced hepatoma, high expression of *N*-acetylglucosaminyltransferase III (rat), **152**, 107
Methylenetetrahydrofolate dehydrogenase (NAD^+)
–methenyltetrahydrofolate cyclohydrolase, detection in

mitochondria of transformed cells (mouse), **155**, 1
9-Methylguanine
and anti-cancer agent Pt(IV)(cyclohexyldiamine)Cl_4, crystal structure of reaction product, **156**, 1120
octahedral complexes with Pt(IV)(cyclohexyldiamine) anti-cancer agents, preparation and characterization, **156**, 1125
3-Methylindole, *see* Skatole
Methylnitrosourea
carbonyl-labeled, interaction with DNA *in vivo* and *in vitro* (bovine thymus, rat tissues), **150**, 835
effect on *in vivo* [^{35}S]methionine interaction with DNA (rat liver), **157**, 373
N-Methyl-*N*-nitrosourea
induced adaptive response, effects of metal ions (*Escherichia coli*), **157**, 1124
Methylosinus trichosporium
purification of methane monooxygenase high-specific-activity hydroxylase component, **154**, 165
1-Methyl-4-phenylpyridinium ion
interaction with platelets (human plasma), **151**, 897
molecular motion, restriction after accumulation into chromaffin granules, ^{13}C and ^{31}P NMR study (bovine), **156**, 1243
N-Methyl-4-phenylpyridinium ion
inhibition of aromatic-L-amino-acid decarboxylase in clonal pheochromocytoma PC12h cells (rat), **152**, 15
1-Methyl-4-phenyl-1,2,3,6-tetrahydropyridine
cerebral and hepatic metabolism *in vivo*, analysis (rat), **152**, 1339
induction of ATP depletion and toxicity, prevention by fructose (rat hepatocytes), **153**, 734
metabolites, interaction with synthetic neuromelanin, associated oxygen activation, ESR, optical, and oxidase electrode study, **154**, 781
2′-*O*-Methyltransferase
nucleolar, specificity for RNA substrates (Ehrlich ascites tumor cells), **155**, 530
Methylumbelliferyl-*p*-guanidinobenzoate hydrochloride
reaction with tissue-type plasminogen activator, **150**, 45
Mevalonate kinase
severe deficiency, effect on isoprenoid lipid levels (human), **152**, 857
Microsomes
cerebral, oxidation of Δ^8- and Δ^9-tetrahydrocannabinol (guinea pig, mouse, rabbit, rat), **157**, 75
hepatic
active center, localization of cytochrome P450 (rat), **150**, 426
Ca^{2+} release, effect of anion transport inhibitor 4,4′-diisothiocyanostilbene-2,2′-disulfonic acid (rat), **151**, 396
ethanol oxidation, effect of obesity (rat), **157**, 315
glycerol oxidation to formaldehyde (rat), **153**, 612
15-hydroxyeicosatetraenoic acid dehydrogenase assay (mouse), **156**, 524
lecithin:retinol acyltransferase detection (human, rat), **156**, 157
leukotriene B_4-coenzyme A ester formation (rat), **154**, 1248
lipid peroxidation, NADPH-dependent, analysis in reconstructed system (rat), **153**, 973
NAD(P)H-dependent reduction of 12-ketoeicosatetraenoic acid to 12(*R*)- and 12(*S*)-hydroxyeicosatetraenoic acids (rat), **156**, 1083
11-oxo-Δ^8-tetrahydrocannabinol oxygenation, mechanism (mouse), **153**, 779
native cardiac, calcium uptake, correlation with ratio of unphosphorylated to phosphorylated phospholamban as determined by Western blotting (dog), **157**, 1296
neutrophil, synthesis of linoleate epoxide (dog, guinea pig, human), **152**, 1310
pancreatic, assembly of bacterial M13 and M13am8H1R1 procoat proteins, stimulation by rabbit reticulocyte lysate and ATP (dog), **153**, 498
Microtubules
associated tau protein, identification of modified form as main component of paired helical filaments in brain of Alzheimer's disease patients, **154**, 660
fast disassembly, induction by Mg^{2+} or Ca^{2+} (bovine brain), **155**, 1464
Milk
detection of benzodiazepine-like molecules (bovine), **152**, 534
proteins, synthesis during asynchronous dual lactation, analysis (tammar wallaby), **154**, 529
Mineralocorticoid receptors
mediated processes, action of spirolactone derivatives, mechanism (rat liver), **150**, 449
Mitochondria
ADP/ATP exchange, enhancement by helium–neon laser irradiation (rat liver), **156**, 978
ATP synthesis, effects of arylidene-cyclopentenedione radiosensitizers: potent inhibition of P_i transport (rat liver), **155**, 1066
Ca^{2+}-dependent NAD(P)$^+$-induced alterations in membrane permeability, analysis (rat hepatoma, liver), **154**, 934
calcium efflux, inhibition by halogenated anesthetics (rat liver), **155**, 978
conversion of 5β-cholestane-3α,7α,12α,26-tetrol into 3α,7α,12α-trihydroxy-5β-cholestanoic acid (rabbit liver), **153**, 267
DNA
in anucleate blood cells, quantitation (human), **155**, 1360
lipid peroxidation-mediated damage, detection (rat liver), **153**, 191
mutant, maternal inheritance in family with mitochondrial myopathy, **154**, 1240
dysfunction, ischemia-induced, effects of sodium channel blocker SUN 1165 (canine myocardium), **157**, 433
53-kDa protein, reconstitution of transmembrane K^+ transport (rat liver), **153**, 224
function, inhibition by T-2 mycotoxin (yeast), **151**, 809
hydrogen peroxide generation pathways (guinea pig brain), **154**, 727
induced activity alterations *in vitro*, analysis with rhodamine 123 (rat liver), **151**, 568

light fraction, role in cellular thermogenesis mechanism (rat liver), **151**, 1241
outer carnitine palmitoyltransferase activity, stimulation by dietary lovastatin (rat liver), **150**, 1077
porphyrin level in hexachlorobenzene-induced experimental porphyria, effect of iron overload (rat liver), **151**, 320
pyruvate transport, effect of doxorubicin (rat heart), **156**, 1302
RNA polymerase, preference for superhelical templates with mitochondrial promoters (HeLa cells), **152**, 22
in transformed cells, detection of NAD-dependent methylenetetrahydrofolate dehydrogenase–methenyltetrahydrofolate cyclohydrolase (mouse), **155**, 1
urea cycle enzymes, effects by sodium benzoate (rat liver), **151**, 872
Moloney murine leukemia virus
long-terminal repeat enhancer region, evidence for slipped DNA structures (*Escherichia coli*), **156**, 417
Molybdenum
–iron cofactor of nitrogenase, electron stoichiometry of oxidized/semi-reduced couple, electrochemical determination (*Azotobacter vinelandii*), **152**, 629
Monensin
effect on fluid-phase and receptor-mediated endocytosis by cultured hepatocytes (rat), **152**, 1275
enhancement of cytotoxic action of disulfide-linked methotrexate–anti-transferrin receptor conjugate (human), **150**, 104
Monoamine oxidase, *see* Amine oxidase (flavin-containing)
Monoclonal antibodies
in analysis of rat liver-specific antigen binding site, **152**, 1138
anti-receptor, in analysis of biosynthesis and degradation of IM-9 lymphoblast substance P receptor (human), **151**, 535
to α-atrial natriuretic polypeptide N-terminus, preparation and application as tool for preferential detection of naturally circulating atrial natriuretic polypeptide, **151**, 1277
binding to glycoprotein complex IIb-IIIa, effect on Ca^{2+} movement and cytoskeletal organization in activated platelets (human), **154**, 258
to calcium pump in brain, binding to chromaffin granules (bovine), **155**, 656
CBL3 and TT62, recognizing islet-specific antigens in human pancreas, characterization, **150**, 775
in characterization of epitopes on cationic peanut peroxidase, **156**, 500
conjugates with different formyl-methionyl-peptide conjugates, chemotactic activity for human monocytes, comparison, **155**, 1139
to cytochrome P450 highly specific to aflatoxin B_1, preparation and characterization (hamster liver), **153**, 441
to HIV envelope glycoproteins, production and characterization *in vitro* (human), **155**, 1105
to HLA class I antigens
depletion of protein kinase C in phytohemagglutinin-activated T cells (human), **152**, 951
effects on protein kinase C kinetics in phytohemagglutinin-activated peripheral blood mononuclear and E^+ T cells (human), **156**, 46
inhibition of lymphocyte proliferation without affecting mitogen-dependent second messenger generation (human), **154**, 712
human progesterone receptor, species cross-reactivity, Western blot analysis (chicken, mammals), **157**, 1067
human ribonuclease inhibitor, isolation and characterization (mouse), **157**, 286
insulin-degrading enzyme, in cellular localization (rat liver), **155**, 914
insulin receptor
β subunit, modulation of receptor tyrosine kinase (human), **152**, 1474
reversal of insulin-induced acceleration of insulin–receptor dissociation rate, **150**, 694
to nonglycosylated and glycosylated prolactin, preparation and applications (porcine pituitary), **151**, 1427
to ocular zonules, reactive with protein components of elastic fiber microfibrils and with elastin-producing cells, generation and characterization (bovine), **151**, 822
opioid receptor, inhibition of opioid binding to cerebral membranes (rat), **154**, 688
to protein kinase C subtypes, recognition of two enzyme subtypes in human platelets, **152**, 642
sequence-dependent, specific for single-chain urokinase, preparation, **152**, 910
to 27- to 34-kDa insulin-like growth factor-binding protein, preparation and characterization (human placenta/decidua), **152**, 208
Monocytes
chemotactic activity of
formyl-methionyl-peptide conjugates with murine monoclonal antibodies, comparison (human), **155**, 1139
recombinant tumor necrosis factor α, analysis (human), **153**, 1223
derived macrophages, secretion of lipoprotein (human), **154**, 572
derived neutrophil-activating peptide, differently charged species, identification (human), **152**, 277
fibrinogen association: evidence for constitutive expression of fibrinogen receptors and role of MAC-1 antigen in binding (human), **156**, 477
and fibroblasts, interleukin-1-stimulated prostaglandin E_2 release, opposite effects of interferon γ (human), **157**, 1197
migration and expression of angiogenic activity, induction by transforming growth factor β (human), **157**, 793
peripheral blood, interleukin 1 synthesis, inhibition by interleukin 4 via post-transcriptional mechanism (human), **157**, 861
requirement for 1,25-dihydroxyvitamin D_3 enhancement of concanavalin A-induced lymphocyte proliferation (bovine), **152**, 545
secreted interferon β_2 forms, phosphorylation (human), **152**, 1144
Monodehydroascorbate reductase (NADH)
plasma membrane, regulation by cell-surface glycoconju-

gates (rat liver), **154**, 1029
Mononuclear cells
peripheral blood
from cutaneous T-cell lymphoma patients, decreased Epstein–Barr virus-induced transformation and elevated 2′,5′-oligoadenylate synthetase and RNase L activity after recombinant interferon α2b treatment, **153**, 448; *erratum*, **155**, 538
expression patterns of tumor necrosis factor, lymphotoxin, and interleukin 6, comparison (human), **153**, 1144
heat-shock protein gene transcription, age-related changes (human), **157**, 580
interferon γ and interleukin 2 production, effects of antitumor polysaccharide schizophyllan (human), **155**, 650
phytohemagglutinin-activated, protein kinase C kinetics, effects of anti-HLA class I monoclonal antibodies (human), **156**, 46
Monooxygenase
polymorphic, catalyzing debrisoquine 4-hydroxylation, mediation of codeine bioactivation in liver (human), **152**, 411
Monophenol monooxygenase
cDNA sequence analysis and effect of melanotropin on gene expression (murine melanoma cells), **153**, 1301
gene expression in amelanotic mutant mice, analysis, **155**, 470
induction by imidazole in cultured B16/C3 melanoma cells, effects of 3,3′,5-L-triiodothyronine and L-thyroxine, comparison (mouse), **155**, 1293
Morphiceptin
and D-Pro^4 analog, conformational analysis by NMR spectroscopy, **152**, 512
Morphine
activation of c-*fos* expression (rat brain), **157**, 698
effect on prostatic carcinoma cell growth, **153**, 722
Mortierella alpina
mycelia, production of 5,8,11,14,17-*cis*-eicosapentaenoic acid: enzyme activation at low temperature, **150**, 335
Motilin
^{125}I-labeled, specific binding to smooth muscle, inhibition by erythromycin and derivatives (rabbit duodenum), **150**, 877; *erratum*, **151**, 954
Mucin
salivary
enzymatic sulfation: structural features of ^{35}S-labeled oligosaccharides (rat), **157**, 61
hydrophobicity, role of associated and covalently bound lipids: effect of proteolysis and disulfide bridge reduction (rat), **151**, 1046
in *Streptomyces* sp. OH-11242 culture medium, release of oligosaccharides with reducing-end *N*-acetylgalactosamine with endoglycosidase, **151**, 422
Mucosa
gastric and oral, mucus coat, maintenance of physicochemical characteristics, role of salivary epidermal growth factor (rat), **152**, 1421
Muramyl dipeptide
stimulation of prostaglandin D_2 release from cultured astrocytes (rat), **156**, 882
Muscarinic receptors
carboxyl residue(s) at ligand-binding site, analysis (rat), **156**, 1203
high-affinity binding of pirenzipine, maintenance: evidence for role of endogenous factor (rat brain stem), **157**, 42
induced Ca^{2+} release and uptake in salivary duct cells, differential inhibition by protein kinase C (human), **152**, 1062
M1, chemical modification: role of histidyl residues in ligand binding (rat cerebral cortex), **151**, 1069
mediation of increased intracellular cAMP levels (human SK-N-SH neuroblastoma cells), **154**, 1137
Muscles, *see also* Myocytes
activation, 30,000–50,000 M_r regulatory factor, detection (hamster), **151**, 170
contraction, inhibiting peptides, purification and characterization (*Mytilus edulis*), **152**, 1376
deoxynucleotide triphosphate intracellular pools in cultured cells, effects of 3′-azido-3′-deoxythymidine (human), **154**, 124
differentiation *in vivo* in early embryo, effects of anti-insulin receptor antibodies (chicken), **153**, 142
L6 cell line, insulin-mediated glucose transporter translocation from intracellular membranes to plasma membranes: sole mechanism of glucose transport, **157**, 1329
skeletal
BC_3H1 cells, regulation of 1,4-dihydropyridine receptor expression, analysis, **152**, 769
contraction of isolated fibers, effects of Bay k 8644 and nifedipine, comparison (*Rana esculenta*), **152**, 1002
distribution of fructose 6-phosphate,2-kinase:fructose-2,6-bisphosphatase isozymes, analysis (bovine, rat), **157**, 949
fatigue during tetanic contraction, relationship to gross energy reserve, ^{31}P-MRS study (rat), **157**, 225
guanine nucleotide exchange factor activity, effect of diabetes (rat), **156**, 706
insulin receptors
binding of monoiodinated insulins and receptor kinase activation, comparison with hepatic receptors (rat), **152**, 1353
structure and function, comparison with hepatic and adipose tissue forms (human), **151**, 123
multifunctional protein kinase Ca^{2+}/CaM-dependent isoenzymes (rabbit, rat), **151**, 1332
targets for calcium channel blockers and respective functions in excitation–contraction coupling (mouse), **156**, 1324
smooth
angiotensin II-induced c-*fos* gene expression, role of protein kinase C activation and Ca^{2+} (rat aorta), **150**, 52
caffeine-induced contraction, time- and use-dependent inhibition by ryanodine (guinea pig aorta), **154**, 219
calcitonin gene-related peptide receptors, identification and characterization (rat aorta), **151**, 1113

Ca^{2+}
intracellular stores, functional removal by ryanodine treatment (guinea pig), **152**, 417
levels in fura-2-loaded cells, effects of carbachol and KCl (*Mytilus edulis*), **153**, 683
release from intracellular stores *in vitro*, induction by endothelin (rat aorta), **156**, 312
$^{45}Ca^{2+}$ uptake in cultured cells, stimulation by 1,25-dihydroxyvitamin D_3 (rat aorta), **152**, 1388
cyclooxygenase mRNA levels and prostanoid synthesis in cultured cells, suppression by dexamethasone (rat aorta), **157**, 1159
DDT_1 MF-2 cells, α_1-adrenergic receptor number and surface accessibility, differential effects of norepinephrine and phorbol ester, **156**, 924
DNA synthesis, independent inhibition by protein kinase C, cyclic AMP, and interferon α/β (rabbit), **157**, 337
elastogenic effect of recombinant transforming growth factor β (porcine aorta), **154**, 895
epidermal growth factor-induced proliferation in culture, effect of transforming growth factor β (rat aorta), **157**, 301
gastric, detection of Na^+/H^+ antiport (dog), **151**, 473
inositol 1,4,5-trisphosphate-dependent and -independent Ca^{2+} release induced by guanine nucleotide, heparin effects (rabbit pulmonary artery), **153**, 625
intracellular Ca^{2+} mobilization in cultured cells, associated human plasma factor, isolation and characterization (rat aorta), **153**, 1068
myosin S1 heavy chain internal crosslinking after dibromobimane treatment (chicken), **152**, 1
neuropeptide Y receptor–effector coupling mechanisms (rabbit pulmonary artery), **151**, 919
phospholipase C in cultured cells, stimulation by endothelin (bovine, rat aorta; human omentum), **157**, 1360
PN 200-110 binding affinities and induced Ca^{2+} current inhibition, comparison (equine portal vein), **152**, 1165
resting anion conductance, evidence for regulation by protein kinase C (rat aorta), **155**, 882
serotonin-stimulated phosphoinositide breakdown in cultured cells, modulation by phorbol ester (rabbit aorta), **153**, 51
S_6 kinase activation by submitogenic levels of thrombospondin (rat aorta), **150**, 278
specific binding of ^{125}I-motilin, inhibition by erythromycin and derivatives (rabbit duodenum), **150**, 877; *erratum*, **151**, 954
thin filaments, calcium regulation, role of caldesmon (ovine aorta), **155**, 197
α-toxin-permeabilized, myofilament Ca^{2+} sensitivity, augmentation by norepinephrine and GTP-γ-S (rabbit mesenteric artery), **157**, 677
vascular, atrial natriuretic factor receptor regulation, role of protein kinase C (rat), **152**, 1097
vasoconstrictive action of peptide endothelin in cultured cells, mechanism (rat aorta), **154**, 868
vasopressin V1 receptors, differential coupling to guanine nucleotide-binding proteins (bovine, rat), **151**, 1293
Muscular dystrophy
early abnormal development of calmodulin-specific mRNA, correlation with calmodulin-resistant Ca^{2+}-ATPase (chicken), **151**, 1434
Mutagenesis
cytochrome $P450_{14DM}$ to inactive form by single amino acid substitution: primary structure deduction from cloned DNAs (yeast), **155**, 317
induced by nuclease activity of 1,10-phenanthroline–copper complex, analysis, **155**, 338
site-directed
alteration of ribulosebisphosphate carboxylase/oxygenase active site (*Rhodospirillum rubrum*), **152**, 579
in analysis of tyrosine-503 role in β-galactosidase activity (*Escherichia coli*), **152**, 1050
basic fibroblast growth factor cDNA, stabilizing effect (human), **151**, 701
cAMP-binding sites of recombinant type I regulatory subunit of cAMP-dependent protein kinase (rat brain), **153**, 1244
β-galactosidase Glu-461 with Gln: role of Glu-461 in enzyme activity (*Escherichia coli*), **153**, 301
modulation of human interferon γ expression in *Escherichia coli*, **151**, 598
at regulatory site of fructose 6-phosphate-1-kinase, analysis (*Bacillus stearothermophilus*), **156**, 537
tryptophan synthase α subunit: preparation and characterization of mutant proteins (*Salmonella typhimurium*), **151**, 672
Mutants
erg6, cholesterol biosynthesis, analysis (yeast), **155**, 509
hexokinase-deficient, in analysis of role of glucose metabolism via Embden–Meyerhof pathway in ATP production during spore germination (*Bacillus megaterium*), **151**, 48
peplomycin-supersensitive CHO and V79 cells, poly(ADP-ribose) synthetase activity, characterization and comparison (Chinese hamster lung, ovary), **151**, 1305
protease VII-deficient, isolation and characterization (*Escherichia coli*), **153**, 753
Schizosaccharomyces pombe, defective in synthesis of small cadmium-binding cadystin peptides, isolation and characterization, **151**, 32
Mutations
affecting peptide bond formation during nikkomycin biosynthesis, identification (*Streptomyces tendae*), **156**, 695
exon–intron junctional, induction of splicing defect resulting in abnormal β-hexosaminidase α-chain mRNAs in Ashkenazi Jewish patients with Tay-Sachs disease, **153**, 463
β-hexosaminidase α-chain gene, identified in Puerto Rican patient with GM_2 gangliosidosis B1 variant, wide geographic and ethnic distribution, **156**, 1015
inducing accumulation of RAS2 protein processing intermediates, identification (yeast), **151**, 1346
point, at insulin proreceptor cleavage site, induction of insulin resistance (human), **153**, 657
position 33 in transthyretin from Israeli patient with familial amyloidotic polyneuropathy, confirmation by re-

striction fragment analysis, **153**, 198
T → A, within ATA box, induction of β-thalassemia (human), **153**, 741
T4-lysozyme active site residues, effect on lytic activity, **153**, 862
Mycoplasma
related organisms, detection with cloned riboprobe, **155**, 443
Mycotoxins
T-2, inhibition of mitochondrial function in yeast, **151**, 809
Myelin basic protein
binding of GTP at single site in N-terminus (human brain), **152**, 1468; *erratum*, **153**, 1333
Myeloperoxidase
binding to mannan, role in fungicidal activity (*Candida albicans*), **154**, 809
role in luminol-dependent photoemission stimulated by phorbol ester and ionophore A23187 (human neutrophils), **155**, 106
Myocytes, *see also* Muscles
atrial noncontracting, secretion of atrial natriuretic factor, inhibition by forskolin (rat), **157**, 330
BC3H-1, hydrolysis of insulin-sensitive phosphatidylinositol-glycan, stimulation by epidermal growth factor and insulin-like growth factor I, **156**, 1346
cardiac
β-adrenergic agonist-stimulated cAMP generation, inhibition by immune cytokine (rat), **150**, 1
ATP-dependent potassium channels, activation by cromakalim (guinea pig), **154**, 620
atrial natriuretic factor release *in vitro*, effect of endothelin (rat), **155**, 167
binding to *Trypanosoma cruzi* trypomastigote 83-kDa glycoprotein (rat), **155**, 256
Ca^{2+} fluxes, $[Ca^{2+}]_i$, and membrane transport, β-adrenergic regulation, role of polyamines as intracellular messengers (rat), **153**, 1179
detection of fibroblast growth factors (adult rat), **157**, 1336
transient accumulation of inositol (1,3,4,5)-tetrakisphosphate in response to α_1-adrenergic stimulation (adult dog), **156**, 485
cell cycle proliferation renewal, role of c-*fos* mRNA accumulation level (mouse), **153**, 1090
L6, proliferation, specific stimulation by growth factor activity in ovine uterine fluids (rat), **156**, 108
Myofilaments
Ca^{2+} sensitivity, in α-toxin-permeabilized arterial smooth muscle, augmentation by norepinephrine and GTP-γ-S (rabbit), **157**, 677
Myoglobin
formation of porphyrin π-cation radical: analysis of electron oxidation products of nickel(II)-substituted hemoproteins, **151**, 1319
Myopathy
mitochondrial, demonstration of maternal inheritance of deleted mitochondrial DNA (human), **154**, 1240
Myosin
–actin system in platelets, effects of gelsolin (pig), **155**, 91
isoenzymes, changes in pressure-overloaded heart, prevention by sucrose feeding (rat), **156**, 917
light chain, phosphorylation–dephosphorylation in aortic smooth muscle homogenate, effect of okadaic acid (pig), **153**, 156
smooth muscle
actin-activated Mg^{2+}-ATPase activity, effect of increasing myosin concentration (turkey gizzard), **154**, 928
S1 heavy chain internal crosslinking, analysis after dibromobimane treatment (chicken), **152**, 1
Myosin light chain kinase
Ca^{2+}/calmodulin-induced activation, inhibition by thyroid hormones (chicken, rabbit), **152**, 270
synthetic peptides based on calmodulin-binding domain, inhibition of other calmodulin-dependent enzymes, **156**, 860

N

NAD^+ (oxidized nicotinamide adenine dinucleotide)
in affinity modification of NADPH–cytochrome P450 reductase (rat liver), **155**, 1026
NAD^+ ADP-ribosyltransferase
gene, induction in lectin-stimulated T lymphocytes, role of protein synthesis (human), **156**, 995; *erratum*, **157**, 1445
NADH (reduced nicotinamide adenine dinucleotide)
dependent reduction of 12-ketoeicosatetraenoic acid to 12(*R*)- and 12(*S*)-hydroxyeicosatetraenoic acids (rat hepatic microsomes), **156**, 1083
role in transmembrane electron transport (*Cuscuta* protoplasts), **156**, 940
NADH ascorbate free radical reductase, *see* Monodehydroascorbate reductase (NADH)
NADH dehydrogenase
mitochondrial
evidence for tissue-specific isoenzymes (rat), **157**, 1423
inhibition by T-2 mycotoxin, **151**, 809
24-kDa iron–sulfur protein subunit, deduction from amino acid sequence (rat hepatic mitochondria), **157**, 914
NADH peroxidase
single active-site cysteinyl residue, identification (*Streptococcus faecalis*), **153**, 261
NAD^+-isocitrate dehydrogenase
and 2-oxoglutarate dehydrogenase, calcium sensitivity in mitochondria, comparison (rat liver, hepatoma cells), **157**, 1218
$NADP^+$ (oxidized nicotinamide adenine dinucleotide phosphate)
in affinity modification of NADPH–cytochrome P450 reductase (rat liver), **155**, 1026
induced alterations of mitochondrial membrane permeability, Ca^{2+}-dependent, analysis (rat hepatoma, liver), **154**, 934
NADPH (reduced nicotinamide adenine dinucleotide phosphate)
dependent microsomal lipid peroxidation, analysis in reconstructed system (rat liver), **153**, 973
dependent reduction of 12-ketoeicosatetraenoic acid to

12(*R*)- and 12(*S*)-hydroxyeicosatetraenoic acids (rat hepatic microsomes), **156**, 1083
NADPH–cytochrome P450 reductase
affinity modification by NADPH analogs (rat liver), **155**, 1026
immunohistochemical detection in kidney and liver (rat), **150**, 925
microsomal, catalysis of hydrazine radical formation (rat liver), **153**, 256
NADPH oxidase
activation in
cell-free system, effect of guanine nucleotides (bovine neutrophils), **152**, 993
HL-60 cells and neutrophils, role of protein kinase C, analysis with protein kinase C inhibitors (human), **152**, 585
inhibition by heat shock (human neutrophils), **154**, 179
Naloxone
effect on prostatic carcinoma cell growth, **153**, 722
Naphthalene
oxidation by cytochrome P450-enriched *Streptomyces griseus* extracts, **157**, 1417
Natural killer cells
splenic, inhibition by eicosapentaenoic acid (mouse), **150**, 497
Neisseria meningitidis
strain 6275, group B capsular polysaccharide, ^{1}H 2-D NMR analysis, **154**, 159
Neomycin
inhibition of
interferon-induced antiviral state (human embryonic fibroblasts), **151**, 402
rapid Ca^{2+} release from isolated cardiac and skeletal sarcoplasmic reticulum membranes (dog, rabbit), **154**, 1
Nerve growth factor
analysis in placenta, semen, and normal and Paget's disease blood by enzyme immunoassay (human), **155**, 482
induction of
neurite outgrowth, associated decrease in poly(ADP-ribose) synthetase levels (PC12 cells), **154**, 1034
transient increase in tetrahydrobiopterin and total biopterin content (PC12h cells), **153**, 382
synthesis in murine L cells, promotion by equine serum, **150**, 723
13- and 53-kDa forms, identification in submaxillary gland (mouse), **152**, 1008
Nerves
impulse blockade, and proteinaceous target sites, effects of experimental general anesthetics, comparison (squid giant axon), **154**, 47
motor, conduction velocity decrease in streptozocin diabetes, inhibition by prostaglandin E_1 analog (rat), **150**, 225
peptidergic terminals, vasopressin secretion, inhibition by calcium channel antagonist ω-conotoxin (rat neurohypophysis), **156**, 255
sciatic, apolipoprotein E synthesis and secretion after injury, enhancement by streptozotocin-induced diabetes (rat), **155**, 283
Neuraminic acid
deaminated, glycoprotein with, isolation from egg vitelline envelope (rainbow trout), **153**, 172
Neuraminidase, *see* Sialidase
Neurocuprein
related protein, isolation in secretory granules from different glands (bovine), **155**, 1430
Neurofilaments
large subunit NF-H, cDNA cloning and *in situ* detection (rat brain), **154**, 1099
200-kDa protein, binding of aluminum, copper, and zinc (bovine, human spinal cord), **152**, 598
Neuromedin U
isolation and structural determination (rat intestine), **156**, 355
Neuromelanin
synthetic, interaction with 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine metabolites, associated oxygen activation, ESR, optical, and oxidase electrode study, **154**, 781
Neurons
cerebral
atrial natriuretic factor receptors, photoaffinity labeling *in vitro* (rat), **152**, 1031
cortical, survival, stimulation by brain extracts from Alzheimer's disease patients (neonatal rat), **150**, 1263
hippocampal CA1, ischemic neuronal death, protection by *S*-adenosyl-L-methionine (rat), **150**, 491
hypothalamic, thyrotropin-releasing hormone synthesis: developmental and circadian TRH mRNA levels (rat), **151**, 615
sympathetic, inferior mesenteric ganglion, depression by atriopeptin III (guinea pig), **154**, 411
Neuropeptides
in adipokinetic/red pigment-concentrating hormone family, isolation from corpora cardiaca (horsefly), **151**, 656
brain natriuretic peptide, *see* Brain natriuretic peptide
hormone with hypertrehalosemic and adipokinetic activities, isolation and primary structure (corn earworm), **155**, 344
Neuropeptide Y
immunoreactive, release by platelets (rat), **155**, 118
receptor–effector coupling mechanisms in vascular smooth muscle cell cultures (rabbit pulmonary artery), **151**, 919
Neurospora crassa
heat shock-induced thermotolerance, relation to peroxidase and superoxide dismutase levels, **156**, 1097
lactate–pyruvate ratios, regulation by cAMP, **150**, 365
membrane-associated insulin receptor and tyrosine kinase, identification and characterization, **155**, 59
Neurotensin
inhibitory effect on pentagastrin-stimulated gastric acid secretion after pylorus ligation (rat), **152**, 231
Neutral protease
calcium-activated, cerebral, role in processing of kyotorphin precursor (rat), **155**, 546
interleukin-1-induced, inhibition by transforming growth factor β (rabbit chondrocytes), **157**, 1352

Neutron scattering
angiotensin I-converting enzyme, determination of molecular weight and shape (porcine lung), **154**, 1144
Neutrophil-activating factor
lymphocyte-derived peptide, structure determination (human), **151**, 883
Neutrophil chemotactic factor
monokine-induced synthesis in endothelial cells (human), **156**, 1340
Neutrophils
activating peptides, monocyte-derived, identification of differently charged species (human), **152**, 277
activation by
serum-opsonized and nonopsonized particulate stimuli, induction of inositol trisphosphate generation, relationship to calcium mobilization and superoxide anion release (human), **150**, 532
surface-bound immunoglobulin: pertussis toxin insensitivity (human), **152**, 136
calcium release, correlation with discharge of specific granule contents (human), **154**, 1308
circulating, surface granulocyte colony-stimulating factor receptor, characterization (human), **156**, 1026
cytosolic free calcium levels and locomotion, stimulation by peptides from interleukin-1-treated synovial cell cultures (human), **155**, 1154
detection of
ecto-protein kinase activity on cell surface (human), **153**, 7
inositol phosphate 5-phosphomonoesterase: effect of protein kinase C activation on enzyme activity (rabbit), **155**, 189
phosphatidylinositol-specific phospholipase D: pathway for generation of second messenger (human), **154**, 502
effect of
botulinum D toxin (rabbit), **152**, 926
protein kinase C inhibitor K-252a (human), **152**, 1497
and endothelial cells, membrane potential, differential effects of leukotriene B_4 and platelet-activating factor (human), **153**, 805
lectin-induced cap formation, enhancement by cyclosporin A (human), **151**, 435
luminol-dependent photoemission, stimulation by phorbol ester and ionophore A23187, role of degranulation and myeloperoxidase (human), **155**, 106
membrane-associated proteins, chemotactic factor-induced tyrosine phosphorylation, analysis (rabbit peritoneum), **151**, 794
microsomal synthesis of linoleate epoxide (dog, guinea pig, human), **152**, 1310
NADPH oxidase inhibition by heat shock, superoxide down-regulation (human), **154**, 179
peripheral blood, chemotactic activity of recombinant tumor necrosis factor α, analysis (human), **153**, 1223
platelet-activating factor synthesis, intracellular localization (human), **154**, 1232
primed, respiratory burst activation by fluoride independently of Ca^{2+} changes, phosphoinositide turnover stimulation, and protein kinase C translocation (human), **150**, 955
superoxide anion generation
N-formyl-methionyl-leucyl-phenylalanine-stimulated, temperature-dependent inhibition by C-I and H-7 (human), **156**, 1376
regulation by ATP, ATPγS, and adenosine, differing calcium requirements (human), **154**, 746
tertiary granules, localization of leukocyte adhesion glycoproteins (human), **154**, 641
Nickel
substituted hemoproteins, electron oxidation products, correlation with formation of porphyrin π-cation in myoglobin, **151**, 1319
Nicotinamide-nucleotide transhydrogenase
mitochondrial, signal peptide amino acid sequence, deduction from corresponding mRNA sequence (bovine heart), **157**, 24
Nicotinate-nucleotide pyrophosphorylase (carboxylating)
bacterial, inhibition by pyridine analogs of quinolinic acid, **152**, 559
Nifedipine
and Bay k 8644, effects on contraction of isolated skeletal muscle fibers, comparison (*Rana esculenta*), **152**, 1002
Nikkomycin
biosynthesis, mutation affecting peptide bond formation, identification (*Streptomyces tendae*), **156**, 695
Nimodipine
^{3}H-labeled, binding to Ca^{2+} channel receptor, inhibition by kappa agonist U50-488H (rat brain), **149**, 1042; *errata*, **151**, 630; **152**, 948
Nitrendipine
inhibition of catecholamine release in intact adrenals, voltage dependence: evidence for dihydropyridine receptor coupling to calcium channels (cat), **153**, 912
Nitric oxide
and endothelium-derived relaxant factor, released from cultured endothelial cells, quantitative and kinetic characterization (porcine aorta), **154**, 236
formation
with L-arginine as physiologic precursor, relationship to endothelium-dependent relaxation of vascular rings (porcine aorta), **153**, 1251
from nitrite reduction by enteric bacteria, **157**, 106
identification as cytotoxic activated macrophage effector molecule (mouse), **157**, 87
Nitrile hydratase
active center, interaction between low-spin iron(III) site and pyrroloquinoline quinone (*Brevibacterium* R312, *Pseudomonas chlororaphis* B23), **154**, 522
induced by and containing cobalt, demonstration (*Rhodococcus rhodochrous*), **155**, 1008
Nitrite
reduction to nitric oxide by enteric bacteria, **157**, 106
Nitroblue tetrazolium
reduction, in detection of interaction of amino groups with pyrroloquinoline quinone, **153**, 353
6-Nitrocholesterol
inhibition of 3-hydroxy-3-methylglutaryl-CoA reductase and tumor cell growth (mouse, rat), **153**, 671

Nitrogenase
iron–molybdenum cofactor, electron stoichiometry of oxidized/semi-reduced couple, electrochemical determination (*Azotobacter vinelandii*), **152**, 629
N-Nitrosodimethylamine
effect on *in vivo* [^{35}S]methionine interaction with DNA (rat liver), **157**, 373
induced DNA alkylation, repair, inhibition by chronic ethanol consumption (rat), **152**, 423
methylation of albumin and IgE genes, comparison (rat liver), **155**, 14
S-Nitrosoglutathione
reaction with protein sulfhydryl groups, analysis, **152**, 916
Nitrous oxide
effect on C_1-tetrahydrofolate synthase expression (rat liver), **157**, 245
Noradrenaline, *see* Norepinephrine
Norepinephrine
augmentation of myofilament Ca^{2+} sensitivity in α-toxin-permeabilized arterial smooth muscle (rabbit), **157**, 677
desensitization, role of refractoriness of calcium release in myocardial pools (rat), **151**, 333
effect on 1,4,5-trisphosphate levels in cerebral cortex slices: mass measurements by radioreceptor assay (rat), **157**, 684
and epinephrine, identification as vasoactive substances in erythrocyte plasma membrane (human), **154**, 1003
induced inositol phosphate formation in cerebral cortex, inhibition by fluoride (rat), **155**, 664
and phorbol ester, differential effects on α_1-adrenergic receptor number and surface accessibility in DDT_1 MF-2 smooth muscle cells, **156**, 924
stimulation of
adult cardiomyocytes, induction of transient accumulation of inositol (1,3,4,5)-tetrakisphosphate (dog), **156**, 485
inositol trisphosphate and tetrakisphosphate production (rat aorta), **156**, 240
lipolysis in adipocytes, inhibition by lipid peroxidation, associated decrease in β-adrenergic receptors (rat epididymis), **150**, 802
urinary levels, effect of atrial natriuretic factor (dog), **156**, 1070
Norleucine
replacement of methionine, identification in recombinant interleukin 2 produced by *Escherichia coli*, **156**, 807
synthesized *de novo* in *Escherichia coli*, misincorporation into recombinant interleukin 2, methods for control, **156**, 733
Nosiheptide
resistance gene, molecular cloning (*Streptomyces actuosus*), **156**, 517
Novobiocin
and butyrate, induction of fibroblast-like transformation and c-*myc* gene alteration in hepatocytes (human), **155**, 305
inhibition of simian virus 40 enhancer activity (murine fibroblasts), **154**, 483
Nuclear factor I
binding sequences of human polyoma JC virus enhancer, analysis with murine brain nuclear extracts, **157**, 419
Nuclear magnetic resonance
^{13}C, natural abundance, paramagnetic ferricytochrome c–cyanide complex: assignment of hyperfine shifted heme methyl carbon resonances (equine heart), **151**, 262
^{19}F, spin–spin relaxation time, correlation with potency of fluorinated ether anesthetics in brain and adipose tissues (rat), **151**, 1039
^{1}H
500-MHz, chlorophylls in photosystem II major light-harvesting chlorophyll–protein complex (barley), **157**, 1085
ribonuclease A, complete fingerprint by total correlation and nuclear Overhauser enhancement spectroscopy experiments in water, **154**, 1253
two-dimensional
analysis of solution conformation of gastrin-releasing peptide, **150**, 552
B capsular polysaccharide of *Neisseria meningitidis* strain 6275, **154**, 159
weakly self-associating salt of guanylyl-(3′-5′)-guanosine, **151**, 86
^{31}P
ATP and creatine phosphate content in post-ischemic heart (guinea pig), **151**, 865
in detection of fatigue unrelated to gross energy reserve of skeletal muscle during tetanic contraction (rat), **157**, 225
measurement of cerebral glucose uptake *in vivo* (rat), **157**, 1258
myocardial pH *in vivo* (cat, dog, sheep), **151**, 70
Nuclear matrix
associated region in proα2(I)collagen gene, location and methylation pattern (human fibroblasts, leukocytes), **157**, 500
small nuclear ribonucleoproteins, core protein enrichment (HeLa cells), **152**, 1383
Nuclear Overhauser effects
positive and negative, simultaneous observation in oligopeptides due to segmental motion, **151**, 153
Nuclease
induced damage of native chromatin, analysis (rat liver), **155**, 1396
1,10-phenanthroline–copper-associated activity, mutagenicity, **155**, 338
Nuclei
histone-1-like antigen identification as envelope component (HEp-2 cells), **156**, 675
phospholipid metabolism, induction of rapid changes by insulin-like growth factor I (Swiss 3T3 fibroblasts), **154**, 1266
renal, glutathione status after buthionine sulfoximine administration (rat), **155**, 956
Nucleolin
identification as physiological substrate for porcine casein kinase II and characterization (mouse), **156**, 1390

Nucleoproteins
pp55$^{c\text{-}fos}$, expression in brain, activation by morphine (rat), **157**, 698
Nucleoside-diphosphate kinase
and stimulatory GTP-binding protein(s), membrane-associated, direct interaction, regulation by hormones and guanine nucleotides (rat liver), **151**, 248
Nucleosomes
core particles
aberrant DNase I digestion kinetics (sea urchin sperm), **155**, 66
lacking one H2A.H2B dimer, preparation and structural characterization (chicken erythrocytes), **157**, 541
Nucleotide sequence
S-adenosyl-L-homocysteine hydrolase cDNA, in deduction of amino acid sequence (*Dictyostelium discoideum*), **153**, 359
aldehyde dehydrogenase signal peptide cDNA (rat hepatic mitochondria), **150**, 1083
androgen receptor-encoding cDNA (human T47D cells), **153**, 241
α1-antitrypsin-like gene 12 kb downstream of genuine α1-antitrypsin gene (human), **155**, 634
arabis mosaic virus satellite RNA: implications for circularity and self-cleavage, **154**, 318
aromatase cDNA (human), **156**, 725
aspartate aminotransferase mRNA (human hepatic mitochondria), **157**, 1309
basic fibroblast growth factor cDNA (rat ovary), **157**, 256
2,3-bisphosphoglycerate mutase cDNA (mouse), **156**, 874
brain natriuretic peptide precursor cDNA (pig), **157**, 410
cAMP-dependent protein kinase regulatory subunit RII_β cDNA (rat ovarian granulosa cells), **154**, 705
carboxylesterase cDNA (rat liver), **156**, 866
cDNA
clones encoding mitochondrial ATP synthase complex α-subunit precursor (bovine liver), **152**, 264
encoding ubiquinone-binding protein of mitochondrial complex III (human), **156**, 987
for MK1 gene expressed in embryonal carcinoma cells and during embryogenesis (mouse), **151**, 1312
C-reactive protein gene (mouse), **156**, 814
2′,3′-cyclic-nucleotide 3′-phosphodiesterase cDNA (human brain), **152**, 837
cytochrome b_5 mRNA (human liver), **156**, 576
cytochrome P450C-M/F isozyme cDNAs, comparison (rat liver), **156**, 681
cytochrome P450 gene encoding alcohol-inducible form 3a (rabbit), **150**, 10
electron transfer flavoprotein α-subunit cDNA (rat liver), **155**, 300
endo A cDNA from 8-cell-stage embryo (mouse), **154**, 890
endonexin cDNA (bovine liver), **156**, 660
follistatin gene (pig), **152**, 717
fructose-6-phosphate,2-kinase:fructose-2,6-bisphosphatase cDNA (human liver), **153**, 328
GABA-A receptor α-subunit cDNA (human), **156**, 1039
β-galactosidase cDNA (human), **157**, 238
β1,4-galactosyltransferase cDNA (human), **157**, 657
gastric H^+,K^+-ATPase cDNA (pig), **157**, 203
glutamate dehydrogenase precursor cDNA (human liver), **152**, 1395
glutathione peroxidase cDNA (rat), **154**, 1024
glycoprotein IIb gene 5′ flanking region (human platelets), **156**, 595
guanine nucleotide-binding protein Goα genomic and cDNA clones (human), **150**, 811; *erratum*, **153**, 487
H protein cDNA (human liver), **151**, 758
hprt cDNA, determination for mutation analysis, methodology (human), **151**, 487
IBP-1 gene (human), **157**, 898
insulin-like growth factor-binding protein cDNA (human), **152**, 1289; *erratum*, **155**, 1485
iodothyronine 5′-monodeiodinase cDNA, homology with protein disulfide isomerase (rat liver), **155**, 1297
large neurofilament subunit NF-H cDNA (rat brain), **154**, 1099
lignin peroxidase gene (*Phanerochaete chrysosporium*), **155**, 626; *erratum*, **157**, 417
lymphocyte proliferation potentiating factor cDNA (rabbit neutrophils), **150**, 1237
lysozyme cDNA (human placenta), **150**, 794
maltohexaose-producing amylase gene from alkalophilic *Bacillus* sp. #707: structural similarity to liquefying-type α-amylases, **151**, 25
metallothionein-I gene (rabbit), **153**, 209
metallothionein-II pseudogene (rabbit), **156**, 1403
monoamine oxidase B cDNA (rat liver), **157**, 970
nonspecific cross-reacting antigen cDNA (human lung carcinoma cells), **150**, 89
pepsinogen gene 5′-flanking region (chicken embryo), **152**, 776
peptide C-terminal α-amidating enzyme cDNA (*Xenopus laevis* skin), **150**, 1275
plasminogen activator inhibitor 2 gene promoter region (human), **156**, 383
platelet membrane glycoprotein Ibα gene (human), **156**, 389
pregnancy-specific β_1-glycoprotein cDNA
and carcinoembryonic antigen-related protein gene, comparison (human), **154**, 130
fragment, exon–intron organization, **156**, 68
homology with carcinoembryonic antigen (human), **152**, 762
prostate antigen cDNAs, **155**, 181
protein S genes (human), **157**, 1033
pyruvate dehydrogenase β subunit cDNA (human liver), **150**, 904
serum amyloid P component gene (mouse), **155**, 1366
subunit β and ϵ genes of ATP synthase (*Bacillus megaterium*), **151**, 926
terminal deoxynucleotidyltransferase 5′-flanking region (human), **154**, 91
testicular cDNA clone, analysis: in identification of 52-kDa member of steroid receptor super-family (human), **155**, 971
thymosin β_{10} cDNA (human kidney), **152**, 862
uncoupling protein gene (rat liver), **157**, 783
von Willebrand factor gene, identification of repetitive Alu

sequences 5′ to transcription initiation site (human), **153**, 1159

O

Obesity
effect on hepatic P450 levels and microsomal ethanol oxidation (rat), **157**, 315
Occlusive arterial disease
platelets from affected patients, fluorescence analysis, **152**, 1410
1-*O*-Octadecyl-2-*O*-methyl-*rac*-glycero-3-phosphocholine
inhibition of Na,K-ATPase and sodium pump (rat brain), **157**, 1000
Octathymidylate
3′-apurinic, covalently linked to intercalating 9-aminoellipticine, synthesis, **152**, 56
Okadaic acid
effect on phosphorylation–dephosphorylation of myosin light chain in aortic smooth muscle homogenate (pig), **153**, 156
Oleic acid
activation of protein kinase C, diacylglycerol effects (bovine spleen, rat brain), **152**, 825
1-Oleoyl-2-acetylglycerol
effect on parathyroid hormone-degrading activity (opossum renal cells), **157**, 908
and phorbol ester, differential effects on fatty acid synthesis in isolated hepatocytes (rat), **151**, 193
1-Oleoyl-2-acetyl-*rac*-glycerol
mimicking of interferon-induced antiviral state (human embryonic fibroblasts), **151**, 402
and other stimuli, induced platelet aggregation, stimulus-dependent inhibition by protein kinase C inhibitors (human), **151**, 542
stimulation of phosphatidylinositol metabolism and prostaglandin E_2 synthesis in lung cancer cells (human), **156**, 644
1-Oleoyl-2-acetyl-*sn*-glycerol
activation of protein kinase C, inhibition by alkyl-linked diglycerides, **151**, 291
mimicking of interferon-induced antiviral state (human embryonic fibroblasts), **151**, 402
Oleoyl-CoA
inhibition of platelet aggregation (human), **156**, 1020
Olfactory reception
large responses after complete removal of olfactory cilia (carp), **154**, 437
2′,5′-Oligoadenylate
activation of RNase L, association with synergistic cytocidal effect of interferon γ with tumor necrosis factor in HT-29 cells (human colon), **151**, 1180
2′,5′-Oligoadenylate synthetase
in peripheral blood mononuclear cells from cutaneous T-cell lymphoma patients, elevation by recombinant interferon α2b treatment, **153**, 448; *erratum*, **155**, 538
Oligo(dC)-cellulose
complementary strand, interaction with DNA hairpin loops by triplet of base pairs, **157**, 986
Oligo-isomaltosaccharides
production by glucosyltransferase (*Streptococcus mutans*), **150**, 687
Oligomannose
-type glycopeptides, and concanavalin A, formation of homogeneous crosslinked lattices, **152**, 1076
Oligonucleotides
allele-specific probes, application in apolipoprotein E genotyping (human blood), **157**, 1212
Oligopeptides
cystine-containing, positive and negative nuclear Overhauser effects, simultaneous observation due to segmental motion, **151**, 153
Oligosaccharides
heparin, activation of human heparin cofactor II, **152**, 1056
insulinomimetic, and insulin, regulation of protein phosphorylation, comparison (Fao hepatoma cells, 3T3-L1 adipocytes), **153**, 992
mucin, ^{35}S-labeled, structural features (rat), **157**, 61
with reducing-end *N*-acetylgalactosamine, release from mucus glycoprotein in *Streptomyces* sp. OH-11242 culture medium by endoglycosidase, **151**, 422
Olive oil
dietary, regulation of hepatic biosynthesis: effect on cytoplasmic acetoacyl-CoA thiolase, β-hydroxy-β-methylglutaryl-CoA synthase, and acetoacetyl-CoA ligase (rat), **153**, 422
Oocytes, *see also* Eggs
intracellular Ca^{2+} mobilization by DL-*myo*-inositol 1,4,5-trisphosphorothioate (*Xenopus*), **150**, 626
plasma membrane–cortical granule complex, associated phosphorylation activity (*Xenopus laevis*), **153**, 1025
production of active human thyroid-stimulating hormone from α and β subunit mRNAs (*Xenopus laevis*), **152**, 703
Opioid receptors
activity in neuroblastoma × glioma hybrid cells, modification by acid phosphatase, **152**, 1369
molecular weight forms, detection in rat brain and neuroblastoma–glioma hybrid cells with polyclonal antibodies, **150**, 237
monoclonal antibodies, inhibition of opioid binding to cerebral membranes (rat), **154**, 688
partially purified, reconstitution with GTP-binding protein (rat brain), **156**, 54
Ornithine carbamoyltransferase
hepatic mitochondrial, effects of sodium benzoate (rat), **151**, 872
Ornithine decarboxylase
expression in PC12 cells, effect of N-*ras* gene transfection, **150**, 1185
induction by
L-asparagine, role of membrane Na^+/H^+ antiport (rat hepatoma cells), **155**, 937
phorbol ester, inhibition by staurosporine (murine skin), **157**, 9
multiple ionic forms, differential degrees of phosphorylation (murine kidney), **153**, 135
overproduction in myeloma and leukemia cells, effect on cell growth (mouse), **155**, 373

renal, strain-specific heterogeneity (mouse), **151**, 450
and ribonucleotide reductase M2 component, associated genes and P5-8 gene, coamplification, relationship to hydroxyurea resistance reversion (CHO cells), **154**, 975; *erratum*, **156**, 1419
Osmium tetroxide
in probing of DNA polymorphic structure (*Escherichia coli*), **150**, 731
Osteoarthritis
experimental, affected articular cartilage, enrichment in guanidine-soluble type VI collagen, demonstration (dog), **157**, 250
Osteoblasts
-like cells in serum-free cultures, growth hormone-dependent stimulation via local synthesis of insulin-like growth factor I (rat), **151**, 142
Osteogenin
dissociative extraction from tooth matrix and partial purification by heparin affinity chromatography (rat), **157**, 1253
Osteopontin
identification as major phosphoprotein secreted by rodent cell lines: enhanced expression in H-*ras*-transformed 3T3 cells (mouse, rat), **157**, 166
Ouabain
sensitivity of
chimeric α subunit (*Torpedo*/rat) of (Na^+,K^+-)ATPase expressed in *Xenopus* oocyte, **155**, 1237
Na^+,K^+-ATPase alpha 3 isozyme, analysis (rat brainstem), **156**, 796
Ovary
superoxide dismutase induction by lutropin (rat), **157**, 146
Oviduct
estrogen-induced proliferation, associated down-regulation of c-*myc*, c-*fos*, and *erb*-B genes (chicken), **150**, 82
S-Oxalylglutathione
identification as γ-glutamyltransferase substrate, implications for enzyme role in cell proliferation, **150**, 828
Oxazolopyridocarbazolium
covalently linked α- and β-anomeric tetrathymidylates, poly(rA) binding parameters, **154**, 252
Oxidation
angiotensin-converting enzyme, induction of increased enzyme activity (rat kidney), **153**, 1032
biological, and bioalkylation of anthracene, analysis *in vivo* and *in vitro* (rat liver, subcutaneous tissue), **151**, 1441
fatty acids
derived products, effects on protein kinase C (rat brain), **155**, 1374
inhibition by bezafibrate and bezafibroyl CoA (rat liver), **157**, 1148
very-long-chain, deficiency in X-linked adrenoleukodystrophy, role of impaired peroxisomal activation of fatty acids (human), **153**, 618
Fe^{2+}-catalyzed, α-crystallin, production of 43-kDa aggregate composed of A and B chains crosslinked by nonreducible covalent bonds (bovine lens), **157**, 626
glycerol to formaldehyde by hepatic microsomes (rat), **153**, 612
11-oxo-Δ^8-tetrahydrocannabinol by hepatic microsomes, oxygenation mechanism (mouse), **153**, 779
porphyrinogen *in vitro*, attenuation by glutathione, reversal by porphyrinogenic trace metals, **152**, 1428
soybean lipoxygenase-catalyzed, by linoleic acid hydroperoxide: different reducing substrates and dehydrogenation of phenidone and BW 755C, **151**, 339
Δ^8- and Δ^9-tetrahydrocannabinol, catalysis by cerebral microsomes (guinea pig, mouse, rabbit, rat), **157**, 75
xenobiotics
by cytochrome P450-enriched *Streptomyces griseus* extracts, analysis, **157**, 1417
hydrogen peroxide-dependent, in analysis of hydroperoxidase activity of lipoxygenase, **155**, 1075
Oxidative stress
associated hexose monophosphate pathway regulation, role of hexokinase (human erythrocytes), **155**, 423
14,15-Oxido-5,8,11-eicosatrienoic acid
catalyzed formation from phosphatidylinositol in lung extract, demonstration of endogenous inhibitors (bovine), **155**, 823
2,3-Oxidosqualene-lanosterol cyclase, *see* Lanosterol synthase
2-Oxoglutarate dehydrogenase
and NAD^+-isocitrate dehydrogenase, calcium sensitivity in mitochondria, comparison (rat liver, hepatoma cells), **157**, 1218
12-Oxo-10,15(*Z*)-phytodienoic acid
biosynthesis: identification of allene oxide cyclase, **156**, 543
6-Oxo-primapterin
identification in hyperphenylalaninemia patient, **153**, 715
11-Oxo-Δ^8-tetrahydrocannabinol
oxidation by hepatic microsomes, oxygenation mechanism (mouse), **153**, 779
Oxygen
activation during interaction between 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine metabolites and synthetic neuromelanin, ESR, optical, and oxidase electrode study, **154**, 781
concentration, regulation of epidermal growth factor-induced proliferation and EGF-receptor down-regulation (human fibroblasts), **153**, 952
effect on carbon tetrachloride metabolism by cytochrome P450: comparison between isozymes (rat), **152**, 1463
enhancement ratio in *Escherichia coli* strain lacking Fe and Mn superoxide dismutases, assessment, **150**, 866
limitation, indirect induction of cytochrome P450 mRNA synthesis in *Candida maltosa* grown on hexadecane, **150**, 859
mitochondrial consumption, inhibition by T-2 mycotoxin, **151**, 809
molecular, reaction with thiyl radical, generation of cysteine thiol peroxyl radical, ESR study, **155**, 405
reactive species, role in pathogenesis of hypoxic damage in isolated perfused liver (rat), **150**, 568
role during horseradish peroxidase turnover and inactivation, **157**, 160
Oxyhemoglobin
β-chain tetramer dissociation, analysis by haptoglobin binding (human), **156**, 438

Oxytocin
and mesotocin, and arginine and lysine vasopressins, identification in single neurohypophysis in marsupial (*Isodon macrourus*), **154**, 346
precursor, processing exopeptidase, isolation from pituitary neurosecretory granules (bovine), **156**, 898

P

Paget's disease
blood from affected patients, analysis for nerve growth factor, **155**, 482
Palmitic acid
effect on activation of protein kinase C in pancreatic acinar cells (rat), **153**, 67
Palmitoylcarnitine
effect on phorbol ester down-regulation of protein kinase C (bovine lymphocytes), **151**, 94
1-Palmitoyl-2-thiopalmitoyl phosphatidylcholine
evaluation as specific chromogenic substrate of phospholipase A_2, **150**, 561
Pancreas
acini, amylase secretion *in vitro*
inhibitory action of cholecystokinin, mechanism (rat), **154**, 1314
and protease zymogen secretion, stimulation by *Pseudomonas aeruginosa* cytotoxin, associated decrease in mRNA levels (rat), **152**, 688
role of protein kinase C type III-α activation by linoleic acid (rat), **153**, 67
beta cells
cytoplasmic Ca^{2+} levels
dual effects of glucose (mouse), **150**, 419
glucose-induced oscillations (mouse), **151**, 1299
glucose-induced electrical activity, role of ATP-sensitive K^+ channels in regulation (mouse), **156**, 769
insulin secretion, effects of arginine and glucagon (rat), **151**, 948
intercellular contact, role in insulin release (rat), **153**, 999
cytoplasmic free Ca^{2+} levels and insulin release, dual effects of glucose, relationship to beta cell fuel deprivation (mouse), **153**, 984
exocrine, bioactivity of synthetic human pancreastatin (rat), **156**, 1237
fetal, insulin secretion, inhibition by chronic stimulation with phorbol ester (human), **151**, 1269
islets
freshly isolated, unregulated secretion of exogenous glycotripeptide (rat), **156**, 457
insulin secretion, stimulation by activin A (rat), **156**, 335
K^+ movements, effect of *Leiurus quinquestriatus* venom (rat), **152**, 1242
whole, hydrogen peroxide generation, synergistic regulation by cytoplasmic free calcium and protein kinase C (rat), **155**, 569
near-total conversion to liver in adult: model for transdifferentiation studies (rat), **156**, 131
prosomatostatin processing, comparison with brain and gut (anglerfish), **151**, 347
protein secretion, effects of human synthetic cholecystokinin-33 (dog), **150**, 1251
Pancreastatin
synthetic human, bioactivity in exocrine pancreas (rat), **156**, 1237
Pancreatic juice
glycoproteins, characterization: 35-kDa truncated protease E and 19-kDa protein X precursor (human), **156**, 318
Pancreatic ribonuclease
complete ^1H NMR fingerprint by total correlation and nuclear Overhauser enhancement spectroscopy experiments in water, **154**, 1253
Papain
in limited proteolysis of photoaffinity-labeled calcium channels for structural analysis (rabbit skeletal muscle), **154**, 455
Paracoccus denitrificans
expression of cytochrome-*c* oxidase subunit III, **154**, 1260
Parathymosin
purification and amino acid sequence analysis: species comparison (bovine, rat liver), **155**, 539
Parathyroid hormone
degrading activity in renal cell, role of protein kinase C in regulation (opossum), **157**, 908
heterologous up-regulation of 1,25-dihydroxyvitamin D_3 receptor in rat osteoblast-like cells (bovine, human), **156**, 588
human, related protein fragment 1–34, effect on glucose-6-phosphate dehydrogenase in distal convoluted tubules in cytochemical bioassay (guinea pig kidney), **154**, 146
induction of Ca^{2+},Mg^{2+}-ATPase in basolateral membrane, role of cAMP-dependent membrane phosphorylation (canine kidney), **150**, 263
inhibition of phosphate uptake in cultured renal cells, α_2-adrenergic modulation (opossum), **155**, 74
Parotid gland
secretion of amylase, role of protein kinase C (rat), **150**, 1309
secretory granules, evidence for two conductance/exchange pathways for chloride (rat), **155**, 984
Particles
virus-like, containing knob-associated histidine-rich proteins, secretion into culture media of *Plasmodium falciparum*, **151**, 749
Pentafluoropropiophenone
cholesterol esterase-inhibiting, synthesis and evaluation, **151**, 554
Pentagastrin
stimulation of gastric acid secretion after pylorus ligation, inhibitory effect of neurotensin (rat), **152**, 231
1-Pentanol
and other general anesthetics, effects on nerve impulse blockade and on proteinaceous target site, comparison (squid giant axon), **154**, 47
Pentapeptides
N-acylated, antagonist activity against substance P on ileum, analysis (guinea pig), **156**, 323

Pentoxifylline
cellular and molecular regulation of tumor necrosis factor-α production (mouse), **155**, 1230
Peplomycin
supersensitive CHO and V79 mutant, poly(ADP-ribose) synthetase activity, characterization and comparison (Chinese hamster lung, ovary), **151**, 1305
Pepsinogen
encoding gene
cell-specific hypomethylation in pepsinogen-producing cells (guinea pig stomach), **155**, 670
isolation and structural analysis (chicken embryo), **152**, 776
F^--stimulated release from gastric chief cells, role of Ca^{2+} influx (guinea pig), **152**, 161
Pepsinogen A
encoding genes, expression in gastric fundic mucosa, role of hypomethylation (human), **151**, 275
Peptides
adrenocorticotropin-inhibiting, purification and structure (human granulocytes), **155**, 524
amidation, analysis: evidence for multiple forms of amidating enzyme (porcine pituitary), **154**, 1293
from amino-terminal transforming region Tyr^4–Thr^{20} of p21 protein, structure determination by two-dimensional NMR, **157**, 776
antigenically reactive fragments of α-bungarotoxin, isolation and localization (*Bungarus multicinctus*), **155**, 870
aromatic ring electrostatic interactions, calculation of magnitude and orientation: implications for angiotensin II, **153**, 1296
cadmium-binding, synthesis-defective *Schizosaccharomyces pombe* mutants, isolation and characterization, **151**, 32
calcitonin gene-related, *see* Calcitonin gene-related peptide
cap-binding, mode of mRNA cap structure recognition: cooperative stacking and hydrogen bond-pairing interactions between m7GpppA and Trp–Leu–Glu, **154**, 199
γ-carboxyglutamic acid-containing, derived from factor IX and factor X, inhibition of prothrombin activation (human), **152**, 1207
chemotactic, activation of phospholipase D in HL-60 granulocytes (human), **150**, 355
dynorphin A (1-13), solvent-exposed NH groups, analysis by FT–IR and ^1H NMR spectroscopy, **151**, 1220
endothelin, vasoconstrictive action in cultured smooth muscle cells, mechanism (rat aorta), **154**, 868
formyl-methionyl-, conjugates with murine monoclonal antibodies, chemotactic activity for human monocytes, comparison, **155**, 1139
free and small, bound hydroxyproline, *in vitro* synthesis in normal and fibrotic liver (rat), **151**, 1128
gastrin-releasing, *see* Gastrin-releasing peptide
with Gly–Arg–Gly–Asp–Ser sequence recognized by glycoprotein complex IIb-IIIa, effect on Ca^{2+} movement and cytoskeletal organization in activated platelets (human), **154**, 258
growth hormone- and prolactin-related, of M_r 13,000–18,000, identification in anterior pituitary (mouse), **156**, 171
immunogenic, for synthetic malaria vaccines, construction (mouse), **153**, 31
inhibiting muscle contraction, purification and characterization (*Mytilus edulis*), **152**, 1376
from interleukin-1-treated synovial cell cultures, stimulation of neutrophil cytosolic free calcium levels and locomotion (human), **155**, 1154
neutrophil-activating, monocyte-derived, identification of differently charged species (human), **152**, 277
N-terminal three-residue, insulin-like growth factor I, role in binding of insulin-like growth factor-binding protein purified from conditioned medium (MDBK cells), **151**, 207
parathyroid hormone-like
encoding gene, assignment to chromosome 2 (rat), **157**, 558
heterologous up-regulation of 1,25-dihydroxyvitamin D_3 receptor in rat osteoblast-like cells (human), **156**, 588
prohormone atrial natriuretic 1–30 and 31–67, detection in blood (human), **150**, 231
proteolytic and synthetic, in analysis of antibody responses to αs1-casein, strain comparisons (mouse), **154**, 876
pyroglutamyl, deblocked N-terminal, analysis and purification with strong cation-exchange sulfoethyl aspartamide column, **156**, 910
signal
for mitochondrial aldehyde dehydrogenase, amino acid sequence (rat liver), **150**, 1083
for mitochondrial nicotinamide nucleotide transhydrogenase, amino acid sequence deduction from corresponding mRNA sequence (bovine heart), **157**, 24
synthetic
based on calmodulin-binding domain of myosin light chain kinase, inhibition of other calmodulin-dependent enzymes, **156**, 860
homologous to human plasma apolipoproteins B and E, inhibition of lymphocyte proliferation (mouse), **154**, 741
nonapeptide derived from interferon γ signal sequence and N-terminus, demonstration of 1–3 disulfide bond (human), **157**, 836
small, modeled after first loop of *Naja mossambica* cardiotoxins, expression of *in vivo* lethality, **153**, 642
T-kinin-containing, released from T-kininogen by cathepsin D of granulomatous tissue, analysis (rat), **150**, 1199
trinitrophenylated D-Tyr–Val–Gly, as substrate for α-amidation, in characterization of peptidyl α-amidating monooxygenase in adrenal chromaffin granules (bovine), **151**, 499
tryptic
carboxypeptidase N active subunit and N-terminus, amino acid sequence, comparison with other carboxypeptidases (human plasma), **154**, 1323
F_1-ATPase β-subunit, labeling by adjacent tightly bound 2-azido-adenine nucleotides at catalytic and noncatalytic sites (rat liver), **154**, 854
generated from estrogen receptor, sequence analysis

UNIVERSITY OF HAWAII LIBRARY

(bovine), **156**, 116
vasopressin-neurophysin precursor, glycopeptide moiety, identification as neurohypophysial prolactin-releasing factor (rat), **151**, 524
Peptide YY
isolation and primary structure (human colon), **157**, 713
Peptide YY receptors
detection in brain (dog, pig), **150**, 25
Peptidyl *O*-acyl hydroxamates
inhibition of cathepsin B, analysis (bovine spleen), **155**, 1201
Peptidyl α-amidating monooxygenase
in chromaffin granules, characterization by trinitrophenylated substrate for peptide α-amidation (bovine adrenal gland), **151**, 499
Perforin
primary sequence and isoelectric point determination (murine lymphocytes), **156**, 740
Perfusion
with adriamycin, associated direct detection of paramagnetic species (rat heart), **153**, 275
flow, leukotriene-induced decrease (rat liver), **151**, 283
Periodic acid
induction of lymphocyte blastogenesis, role of phosphoinositide turnover (rat), **154**, 606
Peroxidase
levels in *Neurospora crassa*, relation to heat shock-induced thermotolerance, **156**, 1097
manganese-dependent, lignin biodegradation, role of Mn^{3+} (*Lentinula edodes*), **157**, 992
peanut, cationic, epitope characterization by monoclonal antibodies, **156**, 500
Peroxidation
lipids
inhibition of norepinephrine-stimulated lipolysis in adipocytes, associated decrease in β-adrenergic receptors (rat epididymis), **150**, 802
iron-dependent, stimulation and inhibition by desferrioxamine (rat brain synaptosomes), **153**, 933
mitochondrial, mediation of DNA damage (rat liver), **153**, 191
NADPH-dependent, analysis in reconstructed system (rat liver microsomes), **153**, 973
vesicle membrane, catalysis by glucose and glycosylated collagen (rat), **151**, 649
Peroxisomes
assembly after fusion of complementary cell lines from patients with Zellweger syndrome and related disorders, kinetic analysis, **152**, 1083
hepatic, detection of ATPase activity (rat), **156**, 1353
impaired activation of very-long-chain fatty acids in X-linked adrenoleukodystrophy, role in deficient fatty acid oxidation (human), **153**, 618
Pertussis toxin
ADP-ribosylation of Nb_2 lymphoma cell membrane protein, effect of prolactin, **156**, 776
effect on
bradykinin-induced generation of inositol 1,4,5-trisphosphate (NG108-15, NIH 3T3 cells), **157**, 1429
neutrophil activation by surface-bound immunoglobulin (human), **152**, 136
inhibition of angiotensin II-mediated phosphatidylinositol breakdown and ADP-ribosylation of 40-kDa protein in smooth muscle cells (rat aorta), **150**, 841
and other toxins, types of ADP-ribose protein bonds formed, comparison (human platelets), **156**, 361
prevention of dihydropyridine inhibition of calcium flux in pituitary tumor cell line 235-1 (rat), **151**, 361
sensitivity of bombesin- and platelet-derived growth factor-induced phospholipase C-mediated hydrolysis of phosphoinositides to, comparison (murine NIH 3T3 cells), **152**, 285
substrates from bovine brain, identification of multiple species and isoforms, **152**, 1185
pH
alteration in cultured endothelial cells, induction by ATP (bovine aorta), **152**, 1304
cytoplasmic, effects of epidermal growth factor (porcine thyroid cells), **157**, 346
differential effects on muscle phosphofructokinase activation by α-glucose 1,6-bisphosphate and fructose 2,6-bisphosphate (rat), **157**, 664
intracellular
determination by 2′,7′-bis(carboxyethyl)-5(6)-carboxyfluorescein (*Halobacterium halobium*), **155**, 123
effect of 4,4′-diisothiocyanostilbene-2,2′-disulfonic acid (rabbit reticulocytes), **150**, 1256
myocardial, ^{31}P NMR measurements *in vivo* (cat, dog, sheep), **151**, 70
role in mechanochemical coupling of sequential polypeptides, **153**, 832
Phase transitions
lipid–gel, in biological membranes, assessment by quick-freeze differential scanning calorimetry and saturation transfer electron spin resonance (tomato), **153**, 104
1,10-Phenanthroline, *see o*-Phenanthroline
o-Phenanthroline
–copper complex, nuclease activity, mutagenicity, **155**, 338
Phenidone, *see* 1-Phenyl-3-pyrazolidinone
Phenobarbital
induction of
cytochrome P450(b+e) gene expression, age effects (rat), **157**, 1403
cytochrome P450, inhibition by phorbol ester: evidence for protein kinase C regulation of induction (rat liver), **153**, 728
Phenobarbitone, *see* Phenobarbital
Phenylalkylamines
calcium channel-blocking, targets in skeletal muscle and functions in excitation–contraction coupling (mouse), **156**, 1324
p-Phenylenediamine
hydrogen peroxide-dependent oxidation, in analysis of hydroperoxidase activity of lipoxygenase, **155**, 1075
Phenylephrine
activation of phospholipase A_2, inhibition by adenosine (hamster adipocytes), **152**, 886

Phenyl isothiocyanate
sulfonated, cytochrome *c* derivative, synthesis and application in superoxide anion measurement (horse), **156**, 1175
1-Phenyl-3-pyrazolidinone
soybean lipoxygenase-catalyzed oxidation by linoleic acid hydroperoxide, **151**, 339
Phloretin
effect on phorbol ester down-regulation of protein kinase C (bovine lymphocytes), **151**, 94
Phorbol 12,13-diacetate
stimulation of fibronectin-mediated cell adhesion (CHO cells), **155**, 603
Phorbol 12,13-dibutyrate
and agonist, induction of prostaglandin receptor desensitization, role of tubulin polymerization (Jurkat cells), **157**, 1046
binding
in 41 cell lines, correlation with protein kinase C activities, **157**, 1
to protein kinase C, affinity enhancement by zinc (rabbit T cells), **154**, 578
effect on
KCl-induced aortic contractile response (endotoxic rat), **150**, 1115
protein kinase C in vascular smooth muscle in spontaneous hypertensive and normotensive states, comparison (rat aorta, renal artery), **154**, 272
enhancement of adenylate cyclase activity and stability in pituitary membranes, **151**, 16
stimulation of potassium-induced cholecystokinin release from slices of cerebral cortex, caudato-putamen, and hippocampus incubated *in vitro* (rat), **153**, 372
4β-Phorbol dibutyrate
stimulation of fibronectin-mediated cell adhesion (CHO cells), **155**, 603
4α-Phorbol 12,13-didecanoate
and agonist, induction of prostaglandin receptor desensitization, role of tubulin polymerization (Jurkat cells), **157**, 1046
stimulation of fibronectin-mediated cell adhesion (CHO cells), **155**, 603
4β-Phorbol 12,13-didecanoate
and agonist, induction of prostaglandin receptor desensitization, role of tubulin polymerization (Jurkat cells), **157**, 1046
effect on parathyroid hormone-degrading activity (opossum renal cells), **157**, 908
Phorbol 12-myristate 13-acetate
and agonist, induction of prostaglandin receptor desensitization, role of tubulin polymerization (Jurkat cells), **157**, 1046
effect on
fatty acid uptake and distribution in HL-60 cells, **157**, 639
lipolysis and glucose metabolism: analysis of relationship to insulin action (rat adipocytes), **154**, 171
protein kinase C in cultured intestinal crypt cells (rat), **154**, 278
superoxide anion release from bone marrow-derived macrophages, comparison with zymosan (rat), **151**, 641
thrombin- and GTP analog-induced platelet granule secretion (human), **156**, 1257
enhancement of adenylate cyclase activity and stability in pituitary membranes, **151**, 16
induction of
differentiation in U937 cells, associated superoxide anion generation capacity, specific activation by concanavalin A (human), **151**, 802
interleukin 1β gene transcription (U937 cells), **156**, 269
protein kinase C degradation without mRNA diminution after treatment of WEHI-231 B-lymphoma cells, **155**, 1311
protein phosphorylation and serotonin release in platelets, effects of amiloride analogs (human), **154**, 101
inhibition of
α_2-adrenergic receptor-mediated cGMP formation in adrenocortical carcinoma cells (rat), **156**, 905
leukotriene D_4-induced signal transduction, rapid reversal by staurosporine (U937 cells), **157**, 521
and ionophore A23187
stimulation of
luminol-dependent photoemission from neutrophils, role of degranulation and myeloperoxidase (human), **155**, 106
T lymphocytes, analysis of interleukin 2 post-translational modification (human), **150**, 97
synergistic inhibition of proteoglycan synthesis in chondrocytes, mechanistic analysis (rabbit), **153**, 690
mediated growth inhibition of mammary carcinoma cells, associated phosphorylation of 27-kDa stress proteins by protein kinase C (human), **152**, 62
and 1-oleoyl-2-acetylglycerol, differential effects on fatty acid synthesis in isolated hepatocytes (rat), **151**, 193
potentiation of KCl-induced vasocontraction, role of calcium (rat aorta), **156**, 1195
stimulated hepatocytes, membrane-bound protein kinase C proteolytic cleavage and degradation, inhibition by cyclosporin A (human), **151**, 997
stimulation of
basophilic leukemia 2H3 cells, subsequent induction of histidine decarboxylase (rat), **151**, 1402
potassium-induced cholecystokinin release from slices of cerebral cortex, caudato-putamen, and hippocampus incubated *in vitro* (rat), **153**, 372
Phosphatase
epidermal, elongation factor 2-specific, stimulation by phorbol ester *in vivo*: augmentation of protein synthesis (mouse), **153**, 1129
microsomal isozymes, isolation and characterization (rat liver), **155**, 7
Phosphate
inorganic
and Na^+, cotransport across renal cortical brush border membrane, potent selective inhibition by α-Cl-α-Br-phosphonoacetic acid (rat), **153**, 1152
transport
by brush border membranes, effects of various forms

of vitamin D (rat kidney), **150**, 1193
into mitochondria, potent inhibition by arylidenecyclopentenedione radiosensitizers (rat liver), **155**, 1066
modification of fructose-bisphosphate aldolase (*Escherichia coli*), **151**, 1033
transfer between proteins CheA and CheY, role in sensory transduction in bacterial chemotaxis (*Salmonella typhimurium*), **151**, 891
uptake by cultured renal cells, inhibition by
atrial natriuretic factor, implications for renal proximal tubules (opossum), **152**, 1416
parathyroid hormone, α_2-adrenergic modulation (opossum), **155**, 74
Phosphatidic acid
^{3}H-labeled, formation in response to formyl-methionyl-leucyl-phenylalanine, effect of diacylglycerol kinase inhibitor R59 022 (human neutrophils), **153**, 1097
vasopressin-stimulated turnover in hepatocytes, early effects of *Escherichia coli* endotoxin (rat), **155**, 151
Phosphatidylcholine
arachidonic acid release, inhibition by dexamethasone during suppression of yeast phagocytosis in murine macrophage cultures, **153**, 583
hydrolysis in cultured REF52 cells, stimulation by vasopressin, **152**, 565
liposomes, fluidity, effect of vitamin E, **150**, 469; *erratum*, **151**, 631
metabolism in insulinoma cells, synergistic stimulation by arginine vasopressin and phorbol esters (rat), **151**, 717
phosphodiesteratic cleavage in cultured endothelial cells, stimulation by bradykinin (bovine), **157**, 1271
synthesis and hydrolysis *in vitro*, effects of insulin and phorbol ester (BC3H-1 myocytes), **154**, 1345
Phosphatidylethanol
synthesis
by phospholipase D in HL-60 cell lysates, activation by phorbol ester, **155**, 249
in platelets: evidence for thrombin-induced phospholipase D activation (human), **156**, 1090
Phosphatidylglycerol
synthesis by phospholipase D in HL-60 cell lysates, activation by phorbol ester, **155**, 249
Phosphatidylinositol
angiotensin II-mediated breakdown in smooth muscle cells, inhibition by pertussis toxin (rat aorta), **150**, 841
catalyzed conversion to 14,15-oxido-5,8,11-eicosatrienoic acid, endogenous inhibitors, demonstration (bovine lung), **155**, 823
containing hydrophobic domain, association with cell membrane and circulating carcinoembryonic antigen, analysis (HT-29 cells), **155**, 794
covalent anchorage of major protein GP-2 of pancreatic zymogen granule membrane (pig, rat), **154**, 818
–glycan, turnover in glomerulosa cells, stimulation by adrenocorticotropin (bovine), **157**, 585
metabolism in lung cancer cells, stimulation by ionophore A23187 and protein kinase C activators (human), **156**, 644
specific phospholipase D, detection in neutrophils: pathway for generation of second messenger (human), **154**, 502
turnover
in small cell lung carcinoma cells, bombesin-stimulated increase, inhibition by bombesin receptor antagonist, **156**, 1383
stimulation by epidermal growth factor without activation of protein kinase C (A431 cells), **155**, 877
Phosphatidylinositol 4,5-bisphosphate
guanosine 5′-(3-*O*-thio)triphosphate-stimulated hydrolysis by soluble phospholipase C from platelets, mediation by GTP-binding protein (human), **154**, 351
interleukin-1-induced breakdown in macrophages: possible receptor activation mechanism (mouse), **152**, 392
role in protein kinase C activation (rat brain), **155**, 18
stimulation of bovine splenic profilin phosphorylation by human placental protein kinase C, **150**, 526
Phosphatidylinositol-glycan
insulin-sensitive
hydrolysis, stimulation by epidermal growth factor and insulin-like growth factor I (BC3H-1 myocytes), **156**, 1346
localization at hepatocyte membrane outer surface (rat), **152**, 1455
Phosphatidylinositol kinase
polyomavirus middle T antigen-associated, augmentation by protein kinase C (murine fibroblasts), **154**, 306
regulation during transition from quiescence to proliferation (*Dictyostelium discoideum*), **150**, 118
Phosphatidylserine
effect on activation of protein kinase C in pancreatic acinar cells (rat), **153**, 67
normalization of hepatic glucosylceramide levels in Gaucher disease model after injection, **152**, 155
Phosphodiesterase
spleen, *see* Spleen exonuclease
Phosphodiester bonds
phosphatidylcholine, cleavage in cultured endothelial cells, stimulation by bradykinin (bovine), **157**, 1271
Phosphoethanolamine
accumulation in tissues and cultured dermal fibroblasts from hypophosphatasia patients, **154**, 948
6-Phosphofructokinase
activation by α-glucose 1,6-bisphosphate and fructose 2,6-bisphosphate, differential effects of allosteric effectors and pH (rat skeletal muscle), **157**, 664
ATP-dependent, relationship to inorganic pyrophosphate–fructose-6-phosphate 1-phosphotransferase of potato tuber (*Escherichia coli*), **154**, 113
regulatory site, site-directed mutagenesis (*Bacillus stearothermophilus*), **156**, 537
Phosphoinositidase C
hydrolysis of phosphoinositides, effect of aluminum (bovine heart), **155**, 203
Phosphoinositides
hydrolysis by
phosphoinositidase C, effect of aluminum (bovine heart), **155**, 203
phospholipase C
bombesin- and platelet-derived growth factor-in-

duced, differential sensitivity to phorbol esters and pertussis toxin (murine NIH 3T3 cells), **152**, 285
in vascular smooth muscle cells, induction by platelet-derived growth factor or angiotensin II, effects of phorbol ester (rabbit), **156**, 846
light-induced degradation in retina, enhancement by chronic lithium treatment (rat), **156**, 1111
serotonin-stimulated breakdown in cultured vascular smooth muscle cells, modulation by phorbol ester (rabbit), **153**, 51
turnover
in hepatocytes, vasopressin-stimulated, early effects of *Escherichia coli* endotoxin (rat), **155**, 151
in lymphocytes, role in periodic acid-induced blastogenesis (rat), **154**, 606
Phospholamban
in native cardiac microsomes, ratio of unphosphorylated to phosphorylated forms as determined by Western blotting, correlation with calcium uptake (dog), **157**, 1296
Phospholipase A_2
activation
associated Ca^{2+} mobilization and G_i dissociation, relationship (human platelets), **153**, 21
by phenylephrine, inhibition by adenosine (hamster adipocytes), **152**, 886
role in retinol induction of platelet aggregation (rabbit), **154**, 1075
evaluation of 1-palmitoyl-2-thiopalmitoyl phosphatidylcholine as specific chromogenic substrate (bee venom, porcine pancreas), **150**, 561
hydrolysis of dipalmitoylphosphatidylcholine gel-phase liposomes, induction of latency period in time course (porcine pancreas), **151**, 851
inhibition by lipocortin-like proteins from murine lung (guinea pig alveolar macrophages), **153**, 1267
pancreatic-type, detection in gastric mucosa (rat), **151**, 1188
purification and structural homology to placental enzyme (human synovial fluid), **157**, 488
Phospholipase C
agonist-activated, inhibition by guanosine 5′-[β-thio]-diphosphate: role of cell permeabilization (human platelets), **153**, 417
hydrolysis of phosphoinositides
induction by bombesin and platelet-derived growth factor, differential sensitivity to phorbol esters and pertussis toxin (murine NIH 3T3 cells), **152**, 285
in vascular smooth muscle cells, induction by platelet-derived growth factor or angiotensin II, effects of phorbol ester (rabbit), **156**, 846
phosphatidylcholine-active, identification and partial characterization (human bile), **150**, 890; *erratum*, **151**, 955
soluble, 5′-(3-*O*-thio)triphosphate-stimulated hydrolysis of phosphatidylinositol-4,5-bisphosphate, mediation by GTP-binding protein (human platelets), **154**, 351
stimulation by
bradykinin, modulation by protein kinase C (MDCK cells), **153**, 454
endothelin, analysis in cultured vascular smooth muscle cells (bovine, human, rat), **157**, 1360
platelet-derived growth factor in NIH-3T3 cells, activity decrease associated with high-level c-*ras* gene expression, **150**, 937
Phospholipase D
activation by
chemotactic peptide in HL-60 granulocytes (human), **150**, 355
thrombin, catalysis of phosphatidylethanol formation (human platelets), **156**, 1090
phosphatidylinositol-specific, detection in neutrophils: pathway for generation of second messenger (human), **154**, 502
synthesis of phosphatidylethanol and phosphatidylglycerol in HL-60 cell lysates, activation by phorbol ester, **155**, 249
Phospholipids
with aliphatic dicarboxylic acid residues, detection in vasodepressor lipid extract (bovine brain), **155**, 863
microsomal, NADPH-dependent peroxidation, analysis in reconstructed system (rat liver), **153**, 973
nuclear, metabolism, induction of rapid changes by insulin-like growth factor I (Swiss 3T3 fibroblasts), **154**, 1266
planar bilayers, reconstitution of cardiac muscle calcium-release channel (dog), **152**, 308
precursors, salvage of deoxycytidine into, analysis (human lymphocytes), **155**, 923
toluene–water ternary system, transfer of spores, bacteria, and yeast into: preservation of bacterial respiratory chain, **151**, 1074
transfer proteins, *in vitro* synthesis (maize seedlings), **157**, 37
–triglyceride emulsions, removal of macrophage cholesterol (mouse), **155**, 709
vesicles
aggregation and fusion, enhancement by abscisic acid, **156**, 511
calcium-dependent binding to prothrombin fragment 1–45, binding constant determination (bovine), **155**, 230
incorporation of cholesteryl binding agent and subsequent antibody binding to: evaluation of antibody viability and specificity, **151**, 932
inserted protein kinase C, constitutive activity, **152**, 336
Phosphonoacetic acid
α-Cl-α-Br-substituted, potent selective inhibition of Na^+/P_i cotransport across renal cortical brush border membrane (rat), **153**, 1152
Phosphoprotein phosphatase
ATP,Mg-dependent, activator protein kinase FA, activation and translocation in platelets, induction by insulin (human), **151**, 61
calmodulin-dependent, inhibition by synthetic peptides based on calmodulin-binding domain of myosin light chain kinase (bovine brain), **156**, 860
cloning of 2Aβ subunit cDNA and increased expression of 2Aα and 2Aβ subunits in liver tumors (rat), **157**, 821
stimulation by inositol trisphosphate and tetrakisphosphate

(rat brain), **155**, 767
type 2 inhibitor, phosphorylation in fat cells (rat), **150**, 197
Phosphoproteins
cytosolic 30-kDa, histamine-stimulated, characterization (rabbit parietal cells), **154**, 489
pp60$^{c\text{-}src}$, ATP-stimulated protein kinase activity in coronary extracts (bovine), **153**, 388
Phospho*enol*pyruvate
C–O bond cleavage, catalysis by 3-deoxy-D-*manno*-octulosonate-8-phosphate synthase, **157**, 816
Phospho*enol*pyruvate carboxylase
phosphorylation *in vitro*, role of Ca^{2+}-calmodulin-dependent process (*Sorghum vulgare* leaf), **155**, 835
Phosphorothioate diester bonds
formation, mediation by satellite tobacco ringspot virus RNA, **156**, 340
Phosphorylase *b* kinase
inhibition by synthetic peptides based on calmodulin-binding domain of myosin light chain kinase (rabbit muscle), **156**, 860
Phosphorylase kinase
calcium-dependent phosphorylation of bovine cardiac C-protein, **155**, 45
Phosphorylase phosphatase
catalytic subunit mRNA, immunoprecipitation of *in vitro* translation product (rabbit muscle), **156**, 1398
Phosphorylation
actin-binding protein in platelets, protection against proteolysis by calcium-dependent sulfhydryl protease (human), **151**, 355
associated activity of oocyte plasma membrane–cortical granule complex (*Xenopus laevis*), **153**, 1025
auto-, *see* Autophosphorylation
Ca^{2+}/calmodulin-dependent, elongation factor 2 *in vitro*, inhibition by cyclosporines D and H, **150**, 545
calmodulin at threonine residues by adrenal cortex cytosol (guinea pig), **156**, 1333
cAMP-dependent
basolateral membrane, role in parathyroid hormone-induced increase in Ca^{2+},Mg^{2+}-ATPase (canine kidney), **150**, 263
proteins in psoriatic fibroblasts, effect of retinoic acid (human), **156**, 263
CD3 antigen in T lymphocytes, regulation by GTP-binding protein (human), **156**, 328
–dephosphorylation, myosin light chain in aortic smooth muscle homogenate, effect of okadaic acid (pig), **153**, 156
epidermal growth factor receptor at threonine 669 by tumor promoter thapsigargin (human A431 cells), **157**, 740
fibroblast- and monocyte-secreted forms of interferon β_2 (human), **152**, 1144
3′-fluorothymidine, analysis in human cell lines, **153**, 825
histones during repression of proliferation, analysis (*Physarum polycephalum*), **153**, 518
isocitrate lyase *in vivo* (*Escherichia coli*), **153**, 875
mRNA cap-binding protein, associated protein kinase activity, identification (rabbit reticulocytes), **153**, 340
nuclear lipids, induction of rapid changes by insulin-like growth factor I (Swiss 3T3 fibroblasts), **154**, 1266
ornithine decarboxylase multiple ionic forms, comparison (murine kidney), **153**, 135
phospholamban, state in native cardiac microsomes, correlation with differences in calcium uptake: Western blot analysis (dog), **157**, 1296
phosphoprotein phosphatase inhibitor-2 in fat cells (rat), **150**, 197
phospho*enol*pyruvate carboxylase, role of Ca^{2+}-calmodulin-dependent process (*Sorghum vulgare* leaf), **155**, 835
photo-, *see* Photophosphorylation
proteins
effects of amiloride analogs (human platelets), **154**, 101
regulation by insulin and insulinomimetic oligosaccharide, comparison (Fao hepatoma cells, 3T3-L1 adipocytes), **153**, 992
stimulation by sodium fluoride and thrombin, comparison (human platelets), **151**, 242
in whole-cell and nuclear extracts, stimulation by DNA (HeLa cells), **157**, 535
p220 subunit of eIF-4F by cAMP-dependent protein kinase and protein kinase C *in vitro* (rabbit reticulocytes), **153**, 925
role in regulation of glutamine synthetase, comparison with adenylylation (*Mycobacterium phlei*), **155**, 1133
selective increased, anion-transport protein in erythrocytes from hypertensive patients, role of calpain, **151**, 590
serine residues on v-*rel* oncogene product/pp40 complex (avian reticuloendotheliosis virus-transformed lymphoid cells), **152**, 441
tubulin, thrombin- or 1,2-diacylglycerol-induced changes, analysis (human platelets), **151**, 1250
tyrosine
induction by insulin in intact adipocytes (rat), **155**, 1181
membrane-associated proteins, analysis in peritoneal neutrophils stimulated with chemotactic factor (rabbit), **151**, 794
3-Phosphoshikimate 1-carboxyvinyltransferase
catalyzed reaction, mechanism: evidence for lack of covalent carboxyvinyl intermediate in catalysis, **153**, 760
Photoaffinity labeling
atrial natriuretic factor receptors in cultured cerebral neurons (rat), **152**, 1031
scorpion toxin receptors associated with synaptosomal Na^+ channels (*Periplaneta americana*), **151**, 187
Photophosphorylation
cyclic, in bundle sheath chloroplasts, effects of various cofactors and inhibitors (*Zea mays*), **151**, 878
Photosensitization
cutaneous, porphyrin, role of superoxide radicals, *in situ* evidence (mouse), **151**, 1054
Photosynthesis
carbon fixation, noncyclic photoreductive: role of light and dark transients of glycerate-3-phosphate, **150**, 399
Photosystem II
18-, 23-, and 33-kDa proteins, removal by sulfite treatment at alkaline pH, **152**, 612
major light-harvesting chlorophyll–protein complex, 500-MHz ^{1}H NMR of chlorophylls (barley), **157**, 1085

o-Phthalaldehyde
inactivation of fructose-1,6-bisphosphatase (rabbit liver), **150**, 1088
Physarum polycephalum
histone H4 mRNA, storage as small cytoplasmic ribonucleoprotein during G_2 phase, **153**, 162
histone phosphorylation during repression of proliferation, analysis, **153**, 518
Phytohemagglutinin
activated lymphocytes, DNA polymerase activity, analysis (bovine), **153**, 1324
activated T cells
proliferation, inhibition by calcitonin gene-related peptide (mouse), **154**, 227
protein kinase C depletion by anti-HLA class I monoclonal antibodies (human), **152**, 951
Pineal gland
cAMP production, daytime activation *in vitro* by forskolin or isoproterenol, relationship to melatonin production (hamster), **157**, 930
melatonin production and serotonin *N*-acetyltransferase activity, stimulation by forskolin during late dark period (hamster), **155**, 209
L-Pipecolate oxidase
identification in liver and deficiency in Zellweger syndrome (human), **154**, 33
Pirenzepine
high-affinity binding to muscarinic receptors, maintenance: evidence for role of endogenous factor (rat brain stem), **157**, 42
Pituitary
anterior
cAMP levels *in vitro*, augmentation by relaxin (rat), **148**, 1246; *erratum*, **150**, 1315
cells desensitized to gonadotropin-releasing hormone, FSH secretion, stimulation by activin (rat), **151**, 1099
colocalization of luteinizing hormone and follicle-stimulating hormone β-subunit mRNAs by *in situ* hybridization with biotinylated probes (pig), **154**, 80
dopaminergic reduction of intracellular calcium levels (rat), **151**, 913
high-affinity atrial natriuretic factor receptors, characterization (rat), **152**, 904
hormones, regional distribution, age-related changes (male rat), **152**, 1213
15-hydroxyeicosatetraenoic acid, specific binding in cultured cells (rat), **152**, 1179
identification of growth hormone- and prolactin-related peptides of M_r 13,000–18,000 (mouse), **156**, 171
multiple cell types, modulation by activin A (rat), **157**, 48
pars intermedia follicular cell monolayers, ion transport regulation (bovine), **157**, 1376
cGMP formation and α-melanotropin secretion in cultured cells, effects of atrial natriuretic factor (rat), **155**, 83
clonal 235-1 cells
adenylate cyclase activity, effect of interleukin 1β, **155**, 1089
calcium fluxes, effect of interleukin 1β, **155**, 1097
cytosolic Ca^{2+} and luteinizing hormone responses *in vitro*, biphasic activation by gonadotropin-releasing hormone (rat), **154**, 398
GH1 cells, nuclear ADP ribosylation, induction by cholera toxin, **150**, 323
gonadotropes, desensitization by mediators of luteinizing hormone release, analysis (rat), **153**, 919
lutropin subunit synthesis in cultured cells, time course, effect of gonadotropin-releasing hormone (rat), **153**, 664
posterior
identification of mesotocin, oxytocin, and arginine and lysine vasopressins in single gland in marsupial (*Isodon macrourus*), **154**, 346
peptidergic nerve terminal vasopressin secretion, inhibition by calcium channel antagonist ω-conotoxin (rat), **156**, 255
Placenta
atrial natriuretic factor receptors, identification of multiple forms (human), **153**, 1
from hypophosphatasia patients, accumulation of phosphoethanolamine, **154**, 948
lipoprotein isolation and characterization (human), **153**, 502
nerve growth factor detection (human), **155**, 482
Plaques
senile, recognition by antisera to β-amyloid protein precursor amino-terminal peptide (human brain), **156**, 432
Plasma, *see also* Blood; Serum
atrial natriuretic factor
free and bound, in spontaneously hypertensive and stroke-prone SH rats, comparison: preferential increase of free ANP, **153**, 1084
levels, comparative effects of angiotensin-converting enzyme inhibitor CS 622 and vasodilator hydralazine after chronic treatment (spontaneously hypertensive rat), **152**, 456
detection of digitalis-like factor (bovine, dog, human, rat), **152**, 322
factor mobilizing intracellular Ca^{2+} in cultured rat vascular smooth muscle cells, isolation and characterization (human), **153**, 1068
and hypothalamus, differential processing of corticotropin-releasing hormone (human), **153**, 1229
immunoreactive N-terminal fragment of proatrial natriuretic factor, increase by water immersion (human), **156**, 228
isolated digoxin-like substance, mass spectrometric analysis (human), **152**, 1435
and liver, T-kininogen levels, developmental and sexual differences (rat), **150**, 1069
as target tissue for glucagon, analysis (human), **151**, 1019
Plasma membranes
adrenal cortical, bound acidic metallo-endopeptidase, cleavage of 140-kDa atrial natriuretic factor receptor (bovine), **152**, 658
associated cAMP-dependent protein kinase, identification (yeast), **151**, 561
carcinoembryonic antigen, linkage to phosphatidylinositol-containing hydrophobic domain (HT-29 cells), **155**, 794

chlorophyll-free, detection of chlorophyllide (*Anacystis nidulans*), **154**, 839
–cortical granule complex, associated phosphorylation activity (*Xenopus laevis* oocytes), **153**, 1025
erythrocyte
microviscosity and post-transfusion survival, correlation (human), **154**, 387
vasoactive substances in acetone extract, identification as epinephrine and norepinephrine (human), **154**, 1003
hepatic, identification of
and characterization of calcitonin gene-related peptide receptors (rat), **152**, 383
protein phosphotyrosine phosphatase catalyzing dephosphorylation of insulin receptors: distinction from alkaline phosphatase (rat), **151**, 633
hepatocyte, fluidity, age- and sex-related changes (rat), **156**, 840
in higher plants, identification of GTP-binding proteins, **156**, 954
lipids, lateral mobility, analysis in normal and transformed keratinocytes, **152**, 491
microsomal, Ca^{2+}, partial inhibition by carbachol (porcine stomach muscle), **150**, 681
pancreatic acinar, detection of Ca^{2+}-stimulated ATPase (rat), **156**, 746
release of GTP-binding protein G_o α subunit, induction by GTP analogs (NG108-15 cells), **152**, 243
synaptic, coupling of high-affinity ω-conotoxin receptors to distinct sites (rat), **154**, 298
vesicles, ATP-dependent Cl^- uptake, demonstration (rat brain), **154**, 108
Plasmids
pBK-TK, cloned human interferon β1 gene, constitutive and inducible expression (HeLa cells), **157**, 1175
pSD(X), erythroid differentiation factor cDNA-containing, expression in CHO cells, **151**, 230
Plasmin
interaction with α_2-antiplasmin, role of inhibitor C-terminal lysine residue, **155**, 591
Plasminogen activator
inhibitor 2, gene promoter region, isolation and characterization (human), **156**, 383
magnetic, targeting to fibrin clot (human), **152**, 739
release from mastocytoma cells (mouse), **153**, 540
single-chain, specific sequence-dependent monoclonal antibody, preparation, **152**, 910
tissue-type
production in diploid fibroblasts, enhancement by proteose peptone (human), **150**, 1230
reaction with 4-methylumbelliferyl-*p*-guanidinobenzoate hydrochloride, **150**, 45
urokinase-type
receptors, and fibrinolysis, parallel induction by interferon γ (U937 cells), **155**, 418
specific cleavage of diphtheria toxin, analysis (human), **157**, 747
Plasminogen receptors
and fibrinolysis, parallel induction by interferon γ (U937 cells), **155**, 418
Plasmodium falciparum
secretion of virus-like particles containing knob-associated histidine-rich proteins into culture media, **151**, 749
Platelet-activating factor
augmentation of DNA synthesis in bone marrow cells (guinea pig), **157**, 563
binding by peripheral blood mononuclear leukocytes, characterization (human), **155**, 311
effect on electron transport in chloroplasts (spinach), **155**, 576
increased production by glomeruli from ischemic kidney (rat), **152**, 129
induction of
glycogenolysis in perfused liver, mediation by prostaglandin D_2 from Kupffer cells (rat), **157**, 1288
transient $[Ca^{2+}]_i$ increase in cultured vascular endothelial cells (human), **154**, 910
and leukotriene B_4, differential effects on membrane potential (human endothelial cells, neutrophils), **153**, 805
role in endotoxin-induced changes in pulmonary contractile response and β-adrenoceptor function (guinea pig), **152**, 527
specific binding sites, detection in brain (gerbil), **151**, 730
stimulation of
intracellular calcium increase, subsequent deactivation by formyl-methionyl-leucyl-phenylalanine: role of protein kinase C (rabbit neutrophils), **151**, 836
superoxide anion and H_2O_2 in monocyte-derived macrophages in culture (human), **156**, 1293
synthesis in neutrophils, intracellular localization (human), **154**, 1232
Platelet-activating factor receptors
antagonists
SRI 63-441, inhibition of interleukin-1-induced inflammation (rabbit eye), **154**, 429
synthesis and biological properties, **150**, 1213; *erratum*, **152**, 949
Platelet-derived growth factor
and bombesin, induction of phospholipase C-mediated hydrolysis of phosphoinositides, differential sensitivity to phorbol esters and pertussis toxin (murine NIH 3T3 cells), **152**, 285
early responses in fibroblasts, interferon effects (mouse), **150**, 1207; *erratum*, **151**, 1461
induction of phospholipase C-mediated phosphoinositide hydrolysis in vascular smooth muscle cells, effects of phorbol ester (rabbit), **156**, 846
and receptor, expression by hepatoma cell lines, analysis: evidence of autocrine regulation (human), **153**, 39
stimulation of
phospholipase activity in NIH-3T3 cells, decrease associated with high-level c-*ras* gene expression, **150**, 937
renal basolateral membrane Ca^{2+},Mg^{2+}-ATPase via specific receptor (dog), **153**, 1315
type 2, β-chain-encoding SIS gene, structural alterations in mesenchymal tumors: reduction to homozygosity (human), **155**, 692
Platelet-derived growth factor receptors
desensitization in Swiss 3T3 fibroblasts: single-cell studies

with quantitative digital video fluorescence microscopy (mouse), **151**, 1205
Platelets
activated, Ca^{2+} movement and cytoskeletal organization, effect of ligands for fibrinogen receptor GPIIb-IIIa complex (human), **154**, 258
actomyosin system, effects of gelsolin (pig), **155**, 91
aggregation
and ATP release and thromboxane A_2 production, relationship (human), **156**, 823
induction
by Egyptian sand viper venom and subfractions (human), **150**, 909
by retinol via phospholipase A_2 activation (rabbit), **154**, 1075
inhibition
by ajoene, role of hemoprotein (bovine), **153**, 479
by long-chain acyl-CoA (human), **156**, 1020
stimulus-dependent, by protein kinase C inhibitors (human), **151**, 542
agonist-induced protein phosphorylation and serotonin release, effects of amiloride analogs (human), **154**, 101
Ca^{2+}-ATPase immunocytochemical localization (human), **153**, 848
cAMP-dependent protein kinase released by thrombin activation, phosphorylation of vitronectin (human), **157**, 1131
collagen-stimulated, arachidonic acid metabolism, effect of 15-hydroperoxyeicosatetraenoic acid (human), **150**, 177
derived transforming growth factor β, high-yield purification (human), **157**, 16
endogenous ADP-ribosylation, analysis (human), **157**, 1323
fluoride-induced activation and protein kinase C-dependent responses, inhibition by forskolin and prostacyclin (human), **156**, 1316
glycoprotein IIb gene, isolation and characterization of 5′ flanking region (human), **156**, 595
granule secretion induced by thrombin and GTP analog, effects of phorbol ester (human), **156**, 1257
–granulocyte suspensions, transcellular conversion of endogenous arachidonic acid to lipoxins (human), **157**, 801
guanosine 5′-[β-thio]diphosphate inhibition of agonist-activated phospholipase C, role of cell permeabilization (human), **153**, 417
immunoreactive neuropeptide Y release, analysis (rat), **155**, 118
insulin receptor, detection, partial characterization, and function (human), **157**, 1190
interaction with 1-methyl-4-phenylpyridinium ion (human plasma), **151**, 897
intracellular Ca^{2+}
elevation after high-salt diet in Dahl-sensitive rats, analysis with fura-2, **154**, 380
spatial distribution and temporal changes (human), **156**, 1152
membrane glycoprotein Ibα gene, isolation and sequencing (human), **156**, 389
membrane high-affinity GTPase, vasopressin-activated, properties (human), **154**, 213
mitochondrial DNA, quantitation (human), **155**, 1360
from patients with occlusive arterial disease, fluorescence analysis, **152**, 1410
penetrating calpain inhibitor, synthesis (human), **153**, 1201
phosphatidylethanol formation: evidence for thrombin-induced phospholipase D activation (human), **156**, 1090
phospholipase A_2 activation, associated Ca^{2+} mobilization and G_i dissociation, relationship (human), **153**, 21
protein kinase C subspecies, properties (human), **155**, 1387; *erratum*, **156**, 1420
protein kinase FA activation and translocation, induction by insulin (human), **151**, 61
protein phosphorylation and activation, stimulation by sodium fluoride and thrombin, comparison (human), **151**, 242
reversible shape change, associated inhibition of adenylate cyclase (human), **152**, 649
secreted proteins, complexes with thrombin, analysis (human), **151**, 9
serotonin secretion, protein kinase C-dependent, enhancement by cytochalasin E, **150**, 745
surface collagen-binding complex related to VLA-2, isolation and characterization (human), **153**, 217
thrombin-stimulated
associated responses, potentiation by epinephrine, role of Na^+/H^+ antiport (human), **151**, 178
protein kinase C activation, localization (human), **156**, 149
washed, receptor-binding properties of prostaglandin H_2 and thromboxane A_2, comparison (human), **157**, 733
Platinum(IV)(cyclohexyldiamine)
anti-cancer agents, octahedral complexes with 9-methylguanine, preparation and characterization, **156**, 1125
Platinum(IV)(cyclohexyldiamine)Cl_4
reaction products with guanosine and 9-methylguanine, crystal structures, **156**, 1120
PN 200-110
binding affinities and Ca^{2+} current inhibition in smooth muscle, comparison (equine portal vein), **152**, 1165
^3H-labeled, as photoaffinity label in structural analysis of calcium channels (rabbit skeletal muscle), **154**, 455
Pneumocytes
from neonatal lung, atrial natriuretic peptide gene expression and secretion, analysis (rat), **156**, 619
Poly(ADP-ribose)
altered synthesis in head and neck squamous carcinoma cells, role in sensitivity to ionizing radiation (human), **154**, 1041
Poly(ADP-ribose) polymerase, *see* NAD^+ ADP-ribosyltransferase
Poly(ADP-ribose) synthetase
activity in peplomycin-supersensitive CHO and V79 mutant cells, characterization and comparison (Chinese hamster lung, ovary), **151**, 1305
reduction of levels during nerve growth factor-promoted neurite outgrowth (rat pheochromocytoma PC12 cells), **154**, 1034

UNIVERSITY OF HAWAII LIBRARY

Polyamines
biosynthesis and transport, modulation by oncogene transfection (Rat-1 fibroblasts), **157**, 264
endogenous, role in glucagon-, isoproterenol-, or serum-mediated induction of tyrosine aminotransferase in cultured cardiac cells (chicken embryo), **152**, 497
Polydeoxyribonucleotides
with alternating purine–pyrimidine sequences, cotransfection, inhibition of c-H-*ras* oncogene-induced transformation of embryonic fibroblasts (rat), **152**, 449
Polymerization
actin in presence of ATP analogs, analysis, **155**, 962
tubulin, and associated guanosine triphosphate hydrolysis, effects of aluminum ion, fluoride, and fluoroaluminate species (bovine brain), **151**, 1025
Polymyxin B
stimulus-dependent inhibition of platelet aggregation (human), **151**, 542
Polyneuropathy
familial amyloidotic, position 33 mutation in transthyretin from Israeli patient, confirmation by restriction fragment analysis, **153**, 198
Polyomavirus
middle T antigen-associated phosphatidylinositol kinase, augmentation by protein kinase C (murine fibroblasts), **154**, 306
Polypeptides
anticoagulant, from snake venom, identification as cardiotoxins (*Naja nigricollis*), **150**, 1012
43-kDa aggregate composed of A and B chains crosslinked by nonreducible covalent bonds, production by Fe^{2+} oxidation of α-crystallin (bovine lens), **157**, 626
galactosyltransferase precursor, *in vitro* biosynthesis (HeLa cells), **151**, 314
poly(VPGVG), coacervation at biological temperatures and low concentrations, **157**, 1061
Salmonella Ra-reactive factor, 28- and 70-kDa, responsible for bactericidal activity, identification (mouse), **152**, 636
secreted by MCF-7 breast cancer cells, identification as estrogen-responsive gene product (human), **155**, 366
sequential, mechanochemical coupling, pK shift of functional group due to hydrophobic effect: evidence for apolar–polar repulsion free energy in water, **153**, 832
titin, sedimentation equilibrium in guanidine hydrochloride (rabbit skeletal muscle), **150**, 1155
Polyphosphates
bis-pyridoxal, synthesis and application as specific intramolecular crosslinking agents for hemoglobin, **156**, 9
Polyriboadenylate
binding of α- and β-anomeric tetrathymidylates covalently linked to oxazolopyridocarbazolium, parameters, **154**, 252
Polysaccharides
group B capsular, *Neisseria meningitidis* strain 6275, ^1H 2-D NMR analysis, **154**, 159
negatively charged, regulation of cytosolic protein-tyrosine kinase (porcine spleen), **154**, 883
Polystyrene
phospholipid-coated column, separation of anticardiolipin antibodies from lupus anticoagulant (human), **155**, 1001
Polyvinyldifluoride
membranes, proteins electroblotted to, internal amino acid sequence determination by *in situ* cyanogen bromide cleavage method, **155**, 1353
Porphyria cutanea tarda
associated iron overload, effect on DNA repair in lymphocytes (human), **154**, 698; *erratum*, **156**, 610
familial, defective erythrocyte uroporphyrinogen decarboxylase, mechanism: roles of metabolic lesion and endogenous porphyrinemia (human), **154**, 39
related hexachlorobenzene-induced experimental porphyria, mitochondrial porphyrin levels, effect of iron overload (rat liver), **151**, 320
Porphyrin
cutaneous photosensitization, role of superoxide radicals, *in situ* evidence (mouse), **151**, 1054
mitochondrial levels in hexachlorobenzene-induced experimental porphyria, effect of iron overload (rat liver), **151**, 320
π-cation radical, formation in myoglobin, hemoglobin, and horseradish peroxidase: analysis of electron oxidation products of nickel(II)-substituted hemoproteins, **151**, 1319
Porphyrinemia
role in defective uroporphyrinogen decarboxylase in familial porphyria cutanea tarda (human), **154**, 39
Porphyrinogen
oxidation *in vitro*, attenuation by glutathione, reversal by porphyrinogenic trace metals, **152**, 1428
Potassium
depolarizing concentrations, inhibition of hormonally induced Ca^{2+} influx (rat liver), **153**, 1282
induction of
cholecystokinin release from slices of cerebral cortex, caudato-putamen, and hippocampus incubated *in vitro*, stimulation by phorbol esters (rat), **153**, 372
proton efflux and depolarization in splenic lysosomes (mouse, rat), **156**, 211
transmembrane transport, reconstitution with 53-kDa mitochondrial protein (rat liver), **153**, 224
Potassium channels
ATP-dependent, in isolated cardiac myocytes, activation by cromakalim (guinea pig), **154**, 620
ATP-sensitive, role in control of glucose-induced electrical activity in pancreatic B cells (mouse), **156**, 769
distinct types in granulosa cells, characterization (chicken), **155**, 761
effect of *Leiurus quinquestriatus* venom (rat pancreatic islets), **152**, 1242
neuronal, associated dendrotoxin I-binding proteins, detection of different populations (*Dendroaspis polylepis*), **153**, 231
Potassium chloride
and carbachol, effects on intracellular free Ca^{2+} levels in fura-2-loaded smooth muscle cells (*Mytilus edulis*), **153**, 683
induction of
aortic contractile response, effect of phorbol ester (en-

dotoxic rat), **150**, 1115
vasocontraction, potentiating effect of phorbol ester, role of calcium (rat aorta), **156**, 1195
Prasterone
binding in liver, physicochemical characterization (rat), **156**, 22
Prealbumin
derivation of amyloid fibril protein in senile systemic amyloidosis (human), **154**, 648
mRNA acute-phase response, comparison with serum amyloid P-component and C-reactive protein (murine liver), **155**, 554
Precocene II
oxidation by cytochrome P450-enriched *Streptomyces griseus* extracts, **157**, 1417
Prednisolone
reduction of tumor necrosis factor receptor affinity and cytotoxicity (human MCF-7 cells, murine L-M cells), **153**, 402
Pregnancy
recognition hormone ovine trophoblast protein-1, demonstration of antiviral activity, **152**, 801
specific β_1-glycoprotein
encoding gene, exon–intron organization: implications for repetitive domains and C-terminal sequences (human), **156**, 68
primary structure, relationship to carcinoembryonic antigen-related proteins (human), **154**, 130
sequence homology with carcinoembryonic antigen (human), **152**, 762
Pregnenolone
binding protein, adrenocortical, identification and antibody development (guinea pig), **150**, 456
mitochondrial production in Leydig's cells, role of sterol carrier protein SCP_2 intracellular redistribution after hormonal stimulation (rat), **154**, 60
Prenyltransferase reaction
different roles of diphosphate moieties of allylic and homoallylic diphosphates, **156**, 396
Preproenkephalin A
mRNA
detection in postmeiotic germ cells (rat testis), **151**, 664
ventricular levels, increase in cardiomyopathic hamsters, **155**, 449
Primapterin
identification in hyperphenylalaninemia patient, **153**, 715
Procollagen
type III, secretion by Ehlers-Danlos syndrome type IV fibroblasts, temperature effects (human), **150**, 140
Proelastase
release from isolated pancreatic acini, stimulation by *Pseudomonas aeruginosa* cytotoxin, associated decrease in mRNA levels (rat), **152**, 688
Profilin
phosphorylation by human placental protein kinase C, stimulation by phosphatidylinositol bisphosphate (bovine spleen), **150**, 526
Progeria
fibroblasts from affected donors, elevation of c-*myc* expression (human), **155**, 996
Progesterone
dependent binding of *trans*-acting factor to uteroglobin gene promoter, analysis (rabbit), **156**, 1368
suppression of α-lactalbumin induction in mammary explants, prolactin requirement (rat), **155**, 1038
synthesis by follicular granulosa cells, modulation by erythroid differentiation factor (rat), **153**, 281
Progesterone receptors
A-form, intracellular synthesis and biological function, analysis (human), **157**, 278
human, monoclonal antibodies, species cross-reactivity, Western blot analysis (chicken, mammals), **157**, 1067
Proinsulin
and insulin, effects on glucose utilization and lipid synthesis pathways in lactating mammary gland *in vitro*, comparison (rat), **154**, 443
Prolactin
effects on bacterial toxin-induced ADP-ribosylation of lymphoma cell membrane proteins, **156**, 776
glycosylated and unglycosylated
receptor binding and Nb2 cell mitogenic activities, comparison (pig, rabbit), **155**, 1187
specific monoclonal antibodies, preparation and applications (porcine pituitary), **151**, 1427
immunoreactive, heterogeneity in brain (rat), **150**, 599
regional distribution in anterior pituitary, age-related changes (male rat), **152**, 1213
related peptides, in range M_r 13,000–18,000, identification in anterior pituitary (mouse), **156**, 171
release in anterior pituitary cells, effects of dopamine: role in reduction of intracellular calcium levels (rat), **151**, 913
requirement in progesterone suppression of α-lactalbumin induction in mammary explants (rat), **155**, 1038
stimulated growth of and binding to lymphoma cells, effects of cyclosporin A (rat), **156**, 233
Prolactin-releasing factor
neurohypophysial, identification as glycopeptide moiety of vasopressin-neurophysin precursor (rat), **151**, 524
Proline
isoaccepting tRNA and codon for, distribution in collagenous and noncollagenous tissue (chicken), **150**, 148
Pro-opiomelanocortin
encoding gene, expression in pheochromocytomas using upstream transcription initiation sites (human), **155**, 895
Propionyl-neuropeptide Y
^{3}H-labeled, specific binding in rabbit aortic membranes, characterization: comparisons with binding in rat brain and biological responses in rat vas deferens, **151**, 1213
Propylbenzilylcholine mustard
inhibition and labeling of renal Na^+/H^+ exchanger (rat), **157**, 921
Propylthiouracil
and precursors, interaction with horseradish peroxidase, **153**, 904
Propyluracil
interaction with horseradish peroxidase, **153**, 904

Prorenin
recombinant, produced in CHO cells, immunoaffinity purification (human), **152**, 849
Prosomatostatin
types I and II, processing in brain, gut, and pancreas, analysis (anglerfish), **151**, 347
Prostacyclin
inhibition of fluoride-induced platelet activation and protein kinase C-dependent responses (human), **156**, 1316
synthesis
induction in vascular endothelial cells, additive effects of interleukin 1 and tumor necrosis factor (human), **156**, 1007
in vascular cells *in vitro*, suppression by dexamethasone (rat), **157**, 1159
Prostaglandin D_2
Kupffer cell, mediation of glycogenolysis induction in perfused liver by platelet-activating factor (rat), **157**, 1288
release from cultured astrocytes, stimulation by sleep-promoting substances (rat), **156**, 882
synthesis by mast cell secretory granules (rat), **156**, 1308
Prostaglandin E
rheumatoid cell levels, comparative effects of interleukin 1 and phorbol ester (human), **150**, 349
Prostaglandin E_1
analog TFC-612, inhibition of decrease in motor nerve conduction velocity in streptozocin diabetes (rat), **150**, 225
Prostaglandin E_2
induced cAMP accumulation in $CD4^+$ T cells, enhancement during CD2-mediated activation (human), **157**, 1396
and lipocortin, production in amnion cells, stimulation by dexamethasone (human), **151**, 137
and phorbol ester, induction of prostaglandin receptor desensitization, role of tubulin polymerization (Jurkat cells), **157**, 1046
release from interleukin-1-stimulated monocytes and fibroblasts, opposite effects of interferon γ (human), **157**, 1197
role in synergistic inhibition of proteoglycan synthesis by ionophore A23187 and phorbol ester (rabbit chondrocytes), **153**, 690
synthesis
by lung cancer cells, stimulation by ionophore A23187 and protein kinase C activators (human), **156**, 644
by mast cell secretory granules (rat), **156**, 1308
renal glomerular, modulation by angiotensin II, role of protein kinase C (rat), **152**, 1481
retina/choroid, inhibition by azathioprine, mechanism independent of cyclooxygenase inhibition (rabbit), **157**, 727
Prostaglandin $F_{2\alpha}$
synthesis by mast cell secretory granules (rat), **156**, 1308
Prostaglandin H_2
and thromboxane A_2, receptor-binding properties in washed platelets, comparison (human), **157**, 733
Prostaglandin I_3
in vivo formation after trieicosapentaenoyl-glycerol intravenous infusion (human), **151**, 1386
Prostaglandin receptors
desensitization, agonist- or phorbol ester-induced, role of tubulin polymerization (Jurkat cells), **157**, 1046
Protease
HIV-1-associated, peptide cleavage specificity, sufficiency for processing gag and pol polyproteins, **156**, 297
staphylococcus V-8, in limited proteolysis of photoaffinity-labeled calcium channels for structural analysis (rabbit skeletal muscle), **154**, 455
Protease VII
isolation of deficient mutant and cloning of encoding gene (*Escherichia coli*), **153**, 753
Protein-2
–chlorophyll *a/b* complex of photosystem II, 500-MHz ^1H NMR of chlorophylls (barley), **157**, 1085
Proteinase K
isoinhibitors, isolation and characterization from granulocytic fraction of neutrophilic granulocytes (horse), **154**, 1107
Protein carboxyl methyltransferase
erythrocyte isozymes I and II, characterization (human), **151**, 1136
Protein-glutamine γ-glutamyltransferase
modification of human β-endorphin *in vitro*, identification of glutamine-11 and lysine-29 as acyl donor and acceptor sites, **154**, 735
plasma and hepatic, identification of vitronectin as substrate (guinea pig), **157**, 115
transamidating activity, measurement by ELISA (guinea pig liver, human erythrocytes), **152**, 505
Protein kinase
activation by
angiotensin II, role in induction of c-*fos* gene expression in cultured vascular smooth muscle cells (rat), **150**, 52
transforming growth factor β in cerebral microvessels (immature rat), **150**, 575
Ca^{2+}/calmodulin-dependent multifunctional
inhibition by synthetic peptides based on calmodulin-binding domain of myosin light chain kinase (rat brain), **156**, 860
isoenzymes from brain, liver, and skeletal muscle, comparison (rabbit, rat), **151**, 1332
type II, mapping of calmodulin-binding domain (rat brain), **152**, 122
cAMP-dependent
association with plasma membrane (yeast), **151**, 561
and -independent, phophorylation of *Ras2* protein (yeast), **157**, 1182
inhibitors, suppression of isoproterenol-induced increase in junctional conductance in cardiac cell pairs (rat), **154**, 509
neural and non-neural type II isozymes, differential sensitivity to cAMP (rat), **156**, 801
phosphorylation of
eIF-2 β subunit (bovine brain), **153**, 313
eIF-4F p220 subunit *in vitro* (rabbit reticulocytes), **153**, 925

platelet M_r 22,000 GTP-binding protein *smg* p21 with same effector domain as *ras* gene products (human), **157**, 851
regulatory subunits
RII_β, cDNA cloning, nucleotide sequencing, and amino acid sequence deduction (rat ovarian granulosa cells), **154**, 705
type I recombinant, site-directed mutagenesis of cAMP-binding sites (rat brain), **153**, 1244
released by thrombin-activated platelets, phosphorylation of vitronectin (human), **157**, 1131
cell surface-associated activity on neutrophils, detection (human), **153**, 7
dependent serotonin secretion in platelets, enhancement by cytochalasin E, **150**, 745
isozymes, alterations in transplantable lung cancer (human), **150**, 163
modulation during inhibition of tumor cell growth by interferon β and γ (human), **150**, 126
phosphorylating mRNA cap-binding protein, identification (rabbit reticulocytes), **153**, 340
phosphorylation of bovine splenic profilin, stimulation by phosphatidylinositol bisphosphate (human placenta), **150**, 526
ribosomal protein S6-phosphorylating, stimulation by insulin (rat skeletal muscle), **152**, 1200
role in amylase secretion (rat parotid gland), **150**, 1309
S_6-specific, activation in cultured vascular smooth muscle cells by submitogenic levels of thrombospondin (human), **150**, 278
vimentin identification as substrate (rabbit neutrophils), **150**, 1006
Protein kinase C
activation
absence during phosphatidylinositol turnover stimulation by epidermal growth factor (A431 cells), **155**, 877
by *cis* and *trans* fatty acids and potentiation by diacylglycerol (rat brain), **154**, 20
by diacylglycerols
inhibition *in vitro* by alkyl-linked diglycerides (human), **151**, 291
modulation by long-chain acyl-CoA (rat brain), **152**, 987
effect on inositol phosphate 5-phosphomonoesterase (rabbit neutrophils), **155**, 189
by lipid oxidation products (rat brain), **155**, 1374
by oleic acid, diacylglycerol effects (bovine spleen, rat brain), **152**, 825
role of phosphatidylinositol 4,5-bisphosphate (rat brain), **155**, 18
role in signal transmission by interleukin 2 in cultured cells (mouse), **154**, 187
in thrombin-stimulated platelets, localization (human), **156**, 149
active, absence in ram spermatozoa, **155**, 901
activity and reactivity to phorbol ester in vascular smooth muscle in spontaneous hypertensive and normotensive states, comparison (rat aorta, renal artery), **154**, 272
in aldosteronoma cells and adjacent adrenal cells, differential redistribution after stimulation with adrenocorticotropin and angiotensin II (human), **155**, 643
association with erythrocyte membranes, induction by protein kinase inhibitor staurosporine (human), **154**, 1273
augmentation of polyomavirus middle T antigen-associated phosphatidylinositol kinase (murine fibroblasts), **154**, 306
B-cell, activation in cell-free system by lipid A (mouse), **152**, 149
Ca^{2+}-activated phospholipid-dependent, isoenzymic forms in liver, identification (guinea pig, mouse, rabbit, rat), **155**, 1017
–Ca^{2+} systems, amylase secretory process subsequent to, inhibition by cholecystokinin (rat pancreatic acini), **154**, 1314
in compensatory kidney growth, analysis (rat), **152**, 315
and cytoplasmic Ca^{2+}, in whole pancreatic islets, synergistic regulation of hydrogen peroxide generation (rat), **155**, 569
degradation without mRNA diminution after treatment of WEHI-231 B-lymphoma cells with phorbol esters, **155**, 1311
dependent platelet responses, inhibition by forskolin and prostacyclin (human), **156**, 1316
depletion in phytohemagglutinin-activated T cells, induction by anti-HLA class I monoclonal antibodies (human), **152**, 951
differential inhibition of muscarinic receptor-induced Ca^{2+} release and uptake in salivary duct cells (human), **152**, 1062
down-regulation
effect on bradykinin-induced generation of inositol 1,4,5-trisphosphate (NG108-15, NIH 3T3 cells), **157**, 1429
by phorbol ester in Chediak-Higashi syndrome (beige mouse), **153**, 648
phorbol ester-mediated, prevention by sphingosine (bovine lymphocytes), **151**, 94
effects of growth- and differentiation-inducing factors (rat intestinal crypt cells), **154**, 278
evidence for regulation of resting anion conductance in vascular smooth muscle cells (rat), **155**, 882
in 41 cell lines, correlation with binding of phorbol ester tumor promoter, **157**, 1
increase
in epithelial cells expressing v-*ras* genes (rat thyroid), **157**, 1093
during progression of cardiomyopathy (hamster heart), **157**, 507
induction of DNA synthesis inhibition in aortic smooth muscle cells (rabbit), **157**, 337
inhibition
by carbon tetrachloride (rat hepatocytes), **153**, 591
role in staurosporine antiproliferative effects (murine fibroblasts), **156**, 1250
by vitamin E (bovine brain), **154**, 694
kinetics in phytohemagglutinin-activated peripheral blood mononuclear and E^+ T cells, effects of anti-HLA class

I monoclonal antibodies (human), **156**, 46
membrane-bound, proteolytic cleavage and degradation in phorbol ester-stimulated hepatocytes, inhibition by cyclosporin A (rat), **151**, 997
membrane-inserted, constitutive activity, **152**, 336
modulation by insulin and glucose (rat adipocytes), **156**, 570
modulation of phospholipase C and augmentation of arachidonic acid release in bradykinin-stimulated MDCK cells, **153**, 454
phorbol ester binding affinity, enhancement by zinc (rabbit T cells), **154**, 578
phosphorylation of
eIF-2 β subunit (bovine brain), **153**, 313
eIF-4F p220 subunit *in vitro* (rabbit reticulocytes), **153**, 925
27-kDa stress proteins during tumor promoter-mediated growth inhibition of mammary carcinoma cells (human), **152**, 62
preparations from brain, associated DNA-binding proteins, detection (rat), **156**, 222
regulation of renal glomerular atrial natriuretic peptide receptor-coupled guanylate cyclase (rat), **157**, 755
role in
angiotensin II modulation of prostaglandin E_2 production by renal glomeruli (rat), **152**, 1481
control of parathyroid hormone-degrading activity (opossum renal cells), **157**, 908
intracellular Ca^{2+} channel activation (rabbit neutrophils), **151**, 836
NADPH oxidase activation in HL-60 cells and neutrophils, analysis with protein kinase C inhibitors (human), **152**, 585
regulation of cytochrome P450 induction by phenobarbital (rat liver), **153**, 728
vascular atrial natriuretic factor receptor regulation (rat), **152**, 1097
serial change in regenerating liver, analysis (rat), **151**, 1144
stimulation by bombesin, potentiation by diacylglycerol kinase inhibitor R 59022 (murine Swiss 3T3 cells), **155**, 561
subcellular distribution in adrenal glomerulosa cells (rat), **156**, 628
subspecies
heterogeneous expression in various tissues (rat), **151**, 973
in platelets, properties (human), **155**, 1387; *erratum*, **156**, 1420
recognition by monoclonal antibodies (human platelets), **152**, 642
translocation, induction by 1,2-dioctanoyl-glycerol (human MCF-7 cells), **151**, 458
type III-α, in pancreatic acinar cells, activation by linoleic acid, role in amylase secretion (rat), **153**, 67
Protein kinase C inhibitors
anticancer ether lipids ET-18-OCH_3 and BM 41.440, inhibition of Na,K-ATPase and sodium pump (rat brain), **157**, 1000
effects on
NADPH oxidase activation in HL-60 cells and neutrophils (human), **152**, 585
primary, secondary, and cloned cytotoxic T cells (mouse), **154**, 1280
K-252a, effects on human neutrophils, **152**, 1497
staurosporine, inhibition of phorbol ester induction of ornithine decarboxylase and tumor promotion (murine skin), **157**, 9
stimulus-dependent inhibition of platelet aggregation (human), **151**, 542
Protein kinase FA
activation and translocation in platelets, induction by insulin (human), **151**, 61
Protein kinase P
polypeptide phosphorylation, inhibition by glycyrrhizin (HeLa S3 cells), **157**, 597
Protein phosphatase, *see* Phosphoprotein phosphatase
Protein phosphotyrosine phosphatase
neutral, catalyzing dephosphorylation of insulin receptor, identification in hepatic plasma membranes: distinction from alkaline phosphatase (rat), **151**, 633
Protein S
gene cloning and nucleotide sequence: identification of PSα gene as site of liver protein S mRNA synthesis (human), **157**, 1033
Proteins
actin-binding, phosphorylation, protection against proteolysis by calcium-dependent sulfhydryl protease (human), **151**, 355
adenine nucleotide-binding, homology with histone H1 variants, **153**, 783
ADP-ribosyltransferase substrate, subcellular distribution and isoelectric heterogeneity (*Clostridium botulinum*), **150**, 1122
alanine carrier, partial purification from intestinal brush border membranes and functional reconstitution into proteoliposomes (rabbit), **152**, 1158
albumin-like, synthesis and secretion by cultured tracheal gland serous cells (bovine), **155**, 857
angiotensin II-binding
biochemical and immunological similarity in different organs (rabbit, rat), **156**, 1230
soluble, detection and characterization (rabbit liver), **151**, 466
archaerhodopsin, characterization (*Halobacterium* sp. aus-1), **151**, 1339
aromatic ring electrostatic interactions, calculation of magnitude and orientation: implications for angiotensin II, **153**, 1296
asialoglycoprotein-binding, hepatic, structural similarity of macrophage lectin specific for galactose/*N*-acetylgalactosamine (rat), **155**, 720
B-36 nucleolar, detection of glycine and dimethylarginine-rich sequence conserved in other nuclear RNA-binding proteins (*Physarum polycephalum*), **155**, 1278
B-50, phosphorylation by casein kinase II (rat brain), **155**, 1207
band 3
bis(sulfosuccinimidyl)suberate crosslinking pattern, modification by partial covalent labeling of band 3

with pyridoxal 5′-phosphate (human erythrocytes), **156**, 1215
selective increased phosphorylation in erythrocytes from hypertensive patients, role of calpain, **151**, 590
bilirubin glucuronyltransferase-activating, isolation from hepatic microsomes (normal, jaundiced Gunn rats), **154**, 1212
botulinum C3 ADP-ribosyltransferase substrate, 24-kDa, comparison with cholera toxin ADP-ribosylation factor (bovine brain), **152**, 957
CAD, mammalian, junction between glutamine amidotransferase and carbamyl phosphate synthetase, identification, **154**, 1047
calcitonin gene-related peptide-binding, identification in cerebellum (human), **151**, 1081
calcium-binding
interactions with adriamycin, analysis with Tb^{3+} (GH3/B6 pituitary tumor cells), **151**, 679
170-kDa, role in caffeine interaction with calcium-release channels of heavy sarcoplasmic reticulum (rabbit skeletal muscle), **154**, 462
calcium/phospholipid-binding, anticoagulant activity, evaluation, **150**, 972
calmodulin-stimulated methylation in hepatic cytosol *in vitro*, identification of glutathione *S*-transferase as substrate and glutathione as inhibitor (rat), **156**, 368
carcinoembryonic antigen-related, and pregnancy-specific β_1-glycoproteins, relationship (human), **154**, 130
cardiac C-, calcium-dependent phosphorylation by phosphorylase kinase (bovine), **155**, 45
CheA and CheY, phosphotransfer, role in sensory transduction in bacterial chemotaxis (*Salmonella typhimurium*), **151**, 891
collagen-binding surface complex related to VLA-2, isolation and characterization (human platelets), **153**, 217
component X, from purified pyruvate dehydrogenase complex, characterization (rat heart), **150**, 816
c-*raf*-1-encoded, expression in *Escherichia coli* (human), **152**, 1045
C-reactive
gene structure (mouse), **156**, 814
mRNA acute-phase response, comparison with serum amyloid P-component and prealbumin (murine liver), **155**, 554
synthesis
in cultured hepatocytes, effects of interleukins 1 and 6 (human), **155**, 112
regulation in hepatoma cell lines, role of interleukin 6 (human), **157**, 271
[^{14}C]valine incorporation in developing brain, insulin effect, relationship to hexokinase activity (rat), **154**, 450
D, identification as component of small nuclear ribonucleoproteins in nuclear matrix (HeLa cells), **152**, 1383
D2, D3, D4, as biomarkers of senescence, identification (rat liver), **154**, 1130
dendrotoxin I-binding neuronal K^+ channel-associated, detection of different populations (*Dendroaspis polylepis*), **153**, 231
DNA-binding, detection in protein kinase C preparations (rat brain), **156**, 222
docking, association with rough endoplasmic reticulum membrane, mechanistic analysis (human), **150**, 111
electroblotted to polyvinyldifluoride membranes, internal amino acid sequence determination by *in situ* cyanogen bromide cleavage method, **155**, 1353
endo A cytokeratin, cDNA, isolation from 8-cell-stage embryo (mouse), **154**, 890
enriched and deficient diets, protective effects on acute ammonium intoxication (rat), **156**, 506
exported, N-terminus consensus sequences resembling metal-binding domains, identification: implications for protein translocation across membranes, **156**, 99
58-kDa, induction during gall formation (*Solidago altissima*), **152**, 1348
56-kDa, abundant in genital skin fibroblasts, low-affinity androgen binding: possible member of steroid/thyroid receptor family (human), **155**, 907
40-kDa, ADP-ribosylation by pertussis toxin in smooth muscle cells (rat aorta), **150**, 841
fusion, *fts*A–*lac*Z-encoded, localization in inner–outer membrane junctions (*Escherichia coli*), **152**, 1023
glucose transporter, cDNA cloning and use in analyzing mRNA alteration during tissue development (rat), **154**, 1204
glycophosphatidylinositol-anchored, solubilizing acid lipase, identification (human serum), **150**, 476
GP-2, in pancreatic zymogen granule membrane, covalent anchorage to phosphatidylinositol (pig, rat), **154**, 818
growth hormone-binding, from human plasma, immunochemical similarity to rabbit hepatic growth hormone receptor, **152**, 573
growth inhibitory, partial purification from multicellular tumor spheroids (human, mouse), **152**, 463
guanine nucleotide-binding
α-subunits, immunological detection in *Dictyostelium discoideum*, **156**, 757
detection in
cyanobacterium *Anabaena cylindrica*, **151**, 215
hepatic microsomes, evaluation (rat), **150**, 848
hypocotyl microsomes (zucchini), **150**, 899
direct coupling to dihydropyridine binding sites (rat), **156**, 1279
effect on adenylate cyclase activity, analysis in v-Ki-*ras*-transformed NIH/3T3 fibroblasts, **153**, 1214
$G_o\alpha$
cloning and DNA sequence analysis (human), **150**, 811; *erratum*, **153**, 487
release from plasma membrane, induction by GTP analogs (NG108-15 cells), **152**, 243
G_z, α-subunit, immunochemical detection in mammalian cell membranes and cytosols, **157**, 883
identification in plasma membranes of higher plants, **156**, 954
induction of conformational changes in adenylate cyclase catalytic unit, detection with tosyl-lysyl chloromethylketone (rat striatum), **156**, 855
inhibitory
dissociation, relationship to Ca^{2+} mobilization during

platelet phospholipase A_2 activation (human), **153**, 21
interaction with A_1 adenosine receptor antagonist (rat adipocyte membranes), **153**, 939
reconstitution of partially purified opioid receptors (rat brain), **156**, 54
and stimulatory, differential regulation by ethanol in neural cells, **155**, 138
low-molecular-weight
multiple, isolation: purification and characterization of 24-kDa protein (bovine brain cytosol), **155**, 1284
purification and characterization (human erythrocytes), **156**, 889
M_r 22,000 *smg* p21 with same effector domain as *ras* gene products
identification (human platelets), **157**, 670
phosphorylation by cAMP-dependent protein kinase (human platelets), **157**, 851
as pertussis toxin substrates, identification of multiple species and isoforms (bovine brain), **152**, 1185
regulation of CD3 antigen phosphorylation (human T lymphocytes), **156**, 328
role in
cell-surface receptor coupling to breakdown of inositol-containing lipids during T-lymphocyte mitogenesis (human), **148**, 1223; *erratum*, **150**, 1315
fibroblast proliferation induction by transforming growth factor β (mouse), **152**, 1228
soluble, mediation of GTP-γ-S-stimulated phosphatidylinositol-4,5-bisphosphate hydrolysis by soluble phospholipase C from platelets (human), **154**, 351
stimulatory, and nucleoside-diphosphate kinase, membrane-associated: direct interaction, regulation by hormones and guanine nucleotides (rat liver), **151**, 248
vesicular stomatitis virus, intracellular transport in CHO cells lacking nuclear envelope, **152**, 469
HC, retinol chromophore, identification (human), **155**, 1424
heat-induced, early and late expression during *Leishmania mexicana* transformation, **156**, 1360
heat-induced migration, protection by cycloheximide (CHO cells), **157**, 611
heat-shock
hsp70, gene transcription in peripheral blood mononuclear cells, age-related changes (human), **157**, 580
hsp90
association with dioxin receptor: structural kinship with glucocorticoid receptor (rat liver), **155**, 801
effect on IM-9 lymphoblastoid cell glucocorticoid receptor binding to DNA–cellulose (human), **151**, 1226
transformation-sensitive 47-kDa collagen-binding, characterization (chicken embryo), **153**, 428
hemolymph, formation of fibrous coagulum during hemostasis (*Manduca sexta* larva), **155**, 1060
heparin-binding, identification on sperm surface (bovine), **153**, 289; *erratum*, **155**, 1485
H, glycine cleavage system-related, cDNA cloning and sequence analysis (human liver), **151**, 758
high-mobility-group HMG1, acetylated, specific interaction with homologous DNA polymerase α *in vitro* (bovine thymus, Guerin ascites tumor cells), **154**, 918
HIV-1 gag and pol, processing, sufficient peptide cleavage specificity of HIV-1 protease, **156**, 297
human parathyroid hormone-related, fragment 1–34, effect on glucose-6-phosphate dehydrogenase in distal convoluted tubules in cytochemical bioassay (guinea pig kidney), **154**, 146
IF_1, inhibition of F_1-ATPase, correlation to nucleotide entrapment (porcine cardiac mitochondria), **152**, 1319
insulin-like growth factor-binding
biologically active fragment from carboxy terminus, isolation (fetal rat), **157**, 718
classification according to binding specificity (human), **156**, 166
cloning, characterization, and expression (human), **152**, 1289; *erratum*, **155**, 1485
demonstration in breast cancer cell lines (human), **152**, 398
growth hormone-dependent, inhibition and potentiation of IGF-I-stimulated DNA synthesis in dermal fibroblasts (human), **156**, 199
IBP-1, gene structural organization (human), **157**, 898
IGF-II-specific, identification by immunoblotting (human serum), **152**, 1131
isolation and NH_2-terminal sequencing (rat serum), **156**, 1187
purified from conditioned medium, requirement of IGF-I N-terminal tripeptide for binding (MDBK cells), **151**, 207
recognition by polyclonal antibody to IGF inhibitor (human serum), **156**, 783
27- to 34-kDa, preparation and characterization of monoclonal antibodies (human placenta/decidua), **152**, 208
intermediate filament, alterations in renal proximal tubule epithelial cells *in vitro*, analysis (rat), **157**, 1316
iodide binding, inhibition by iodide: H_2O_2 generation inhibition as cause of Wolff–Chaikoff effect (canine thyroid), **154**, 1287
iron–sulfur 24-kDa subunit of mitochondrial NADH dehydrogenase, deduced amino acid sequence (rat liver), **157**, 914
knob-associated histidine-rich, contained in virus-like particles, secretion into culture media of *Plasmodium falciparum in vitro* cultures, **151**, 749
lipocortin-like
inhibition of phospholipase A_2 activity of guinea pig alveolar macrophages (murine lung), **153**, 1267
rapid purification from lung (mouse), **153**, 1271
*lux*F gene-encoded, homology with luciferase subunits (*Photobacterium phosphoreum*), **155**, 351
lymphocyte pore-forming, primary sequence and isoelectric point determination (mouse), **156**, 740
membrane
ADP-ribosylation by bacterial toxins, effects of prolactin (Nb_2 lymphoma cells), **156**, 776
neutrophil chemotactic factor-induced tyrosine phosphorylation, analysis (rabbit peritoneum), **151**, 794

proteolysis, inhibition by synthetic calpain inhibitor (rat erythrocytes), **157**, 1117
22–24-kDa, distinct from $p21^{N\text{-}ras}$, ADP-ribosylation by botulinum toxin D (HL-60 cells, human platelets), **155**, 263
mitochondrial 53-kDa, reconstitution of transmembrane K^+ transport (rat liver), **153**, 224
mRNA cap-binding
associated Trp–Leu–Glu sequence, cooperative stacking and hydrogen bond-pairing interactions with mRNA cap structure analog m7GpppA, **154**, 199
phosphorylating protein kinase activity, identification (rabbit reticulocytes), **153**, 340
muscle activation-regulating cofactor of M_r 30,000–50,000, detection (hamster), **151**, 170
myelin basic, *see* Myelin basic protein
neurofilament, 200-kDa, binding of aluminum, copper, and zinc (bovine, human spinal cord), **152**, 598
nonhistone HMG1, removal of transcriptional block caused by left-handed Z-form segment in supercoiled DNA (porcine thymus), **153**, 334
oxidized lens, reduction by lipoamide-reduced thioredoxin fragment 31–36, **150**, 156
p21
amino-terminal transforming region Tyr^4–Thr^{20}, structure determination by two-dimensional NMR, **157**, 776
c-Ha-*ras*-encoded, GDP–Mg^{2+} complex, ^1H NMR study, **150**, 444
inhibition of cathepsin L-induced degradation of epidermal growth factor receptors (human A431 cells), **151**, 78
pancreatic acinar cell, cholera toxin-sensitive 40-kDa, photoaffinity labeling with GTP-γ-azidoanilide (rat), **155**, 1051
parathyroid hormone-related, expression in human T-cell lymphotropic virus type I-infected T-cell line (human), **154**, 1182
phospholipid transfer, *in vitro* synthesis (maize seedlings), **157**, 37
phosphorylation
agonist-induced, effects of amiloride analogs (human platelets), **154**, 101
cAMP-dependent, effect of retinoic acid (human psoriatic fibroblasts), **156**, 263
regulation by insulin and insulinomimetic oligosaccharide, comparison (Fao hepatoma cells, 3T3-L1 adipocytes), **153**, 992
stimulation by sodium fluoride and thrombin, comparison (human platelets), **151**, 242
in whole-cell and nuclear extracts, stimulation by DNA (HeLa cells), **157**, 535
photosystem II, 18-, 23-, and 33-kDa, removal by sulfite treatment at alkaline pH, **152**, 612
placental PP5, purification and characterization (human), **150**, 483; *erratum*, **151**, 630
plasma, identification of [hydroxyproline^3]-lysyl-bradykinin released by ovine pancreatic kallikrein (human), **150**, 511
platelet-secreted, complexes with thrombin, analysis (human), **151**, 9
pp40, and complexed v-*rel* oncogene product, serine phosphorylation (avian reticuloendotheliosis virus-transformed lymphoid cells), **152**, 441
$pp60^{c\text{-}src}$
localization in PC12 cell growth cone, **157**, 1383
phosphorylation and associated inhibition by protein-tyrosine kinase (neonatal rat brain), **154**, 796
pregnenolone-binding, adrenocortical, identification and antibody development (guinea pig), **150**, 456
procoat, M13 and M13am8H1R1, assembly into canine pancreatic microsomes, stimulation by rabbit reticulocyte lysate and ATP (*Escherichia coli*), **153**, 498
Ras2-encoded, phosphorylation by different protein kinases (yeast), **157**, 1182
RAS2 mutation resulting in accumulation of processing intermediates, identification (yeast), **151**, 1346
RecA, mediated ATP hydrolysis, DNA sequence dependence, **157**, 127
retinoic acid-binding, 16.2-kDa cellular form, purification and partial characterization (chicken embryo), **157**, 1302
retinoid-binding, affinity gels for purification (human), **155**, 503
retinol-binding
cellular, pulmonary mRNA levels, retinoic acid-induced increase in retinol-deficient rats, **156**, 712
mRNA
detection in seminiferous tubule somatic cells (rat), **154**, 1174; *erratum*, **157**, 1444
levels in cultured Sertoli cells, regulation by cAMP and retinol (rat), **152**, 1504
synthesis in eye (rat), **157**, 1078
ribosomal
role in specificity of rRNA cleavage by α-sarcin (*Escherichia coli*, yeast), **154**, 404
S6, phosphorylating protein kinase, stimulation by insulin (rat skeletal muscle), **152**, 1200
ribosome-inactivating, from plants, RNA *N*-glycosidase activity, **150**, 1032
secretory, from Clara cells, associated mRNA, *in vitro* translation (rabbit lung), **153**, 470
signal sequence-dependent translocation in minicell system, prediction (*Escherichia coli*), **150**, 371
64-kDa, identification in prolactin-producing pituitary tumor cells: candidate for thyrotropin-releasing hormone receptor (rat), **157**, 875
smg-21 gene-encoded, with same effector domain as *ras* gene products, homology with human platelet M_r 22,000 GTP-binding protein (bovine brain), **157**, 670
sterol carrier protein SCP_2
intracellular redistribution in Leydig's cells after hormonal stimulation, role in pregnenolone production (rat), **154**, 60
mass spectrometric analysis (rat liver), **154**, 476
stress, 27-kDa, phosphorylation by protein kinase C during tumor promoter-mediated growth inhibition of mammary carcinoma cells (human), **152**, 62
structure in aqueous solutions, analysis by Fourier trans-

form infrared spectroscopy (rabbit muscle), **152**, 69
sulfation, inhibition by substrates of sulfation and sulfate analogs (HepG2 cells), **150**, 342
sulfhydryl groups, reaction with *S*-nitrosoglutathione, analysis, **152**, 916
synthesized in bone cells, identification by antibody screening of cDNA expression library (rat), **151**, 382
target sites of anesthetics, and nerve impulse blockade, effects of experimental general anesthetics, comparison (squid giant axon), **154**, 47
tau, microtubule-associated, identification of modified form as main component of paired helical filaments in brain of Alzheimer's disease patients, **154**, 660
39-kDa whey, from mammary secretions collected during nonlactating period, isolation and characterization (bovine), **150**, 329
trans-acting
positive and negative, role in modulation of interferon gene transcription (human epithelioid 293 cells), **154**, 1338
progesterone-dependent binding to uteroglobin gene promoter, analysis (rabbit), **156**, 1368
transmembrane, encoding by mRNA expressed in F9 cells and down-regulated by tumor-promoting phorbol ester (mouse), **157**, 548
2ar, identification as major phosphoprotein secreted by rodent cell lines: enhanced expression in H-*ras*-transformed 3T3 cells (mouse, rat), **157**, 166
tyrosine-*O*-sulfate-binding, isolation and characterization (bovine liver), **156**, 964
ubiquinone-binding, of mitochondrial complex III, cDNA cloning and sequencing (human), **156**, 987
uncoupling, encoding gene, complete sequence, primary transcript structure, and exon evolutionary relationships (rat liver), **157**, 783
uteroglobin-like, detection in human neonatal tracheobronchial washings (rabbit), **152**, 1447
viral, α_2-macroglobulin-conjugated, increased uptake by macrophages, stimulation of antibody production to viral proteins (mouse), **150**, 883; *erratum*, **151**, 955
vitamin D-binding, association with unsaturated fatty acids, **153**, 1019
Protein synthesis
during asynchronous dual lactation, analysis (tammar wallaby), **154**, 529
effect of antibacterial agent DuP 721 (*Bacillus subtilis*), **150**, 965
epidermal, effect of phorbol ester *in vivo*: stimulation of elongation factor 2 phosphatase activity (mouse), **153**, 1129
inhibition
by aminoglycoside antibiotics in polyamine-requiring bacterial strains (*Escherichia coli*), **150**, 947
by *Clostridium perfringens* enterotoxin, mechanistic analysis (Vero cells), **153**, 699
in reticulocyte lysates, selective inhibition by L-pyrroline-5-carboxylic acid (rabbit), **150**, 296
in retinol-deficient testis, early effects of retinol and retinoic acid (rat), **151**, 53
role in poly(ADP-ribose) polymerase gene induction in lectin-stimulated T lymphocytes (human), **156**, 995; *erratum*, **157**, 1445
Protein-tyrosine kinase
associated with insulin and insulin-like growth factor I receptors, characterization with inhibitors (human placenta), **157**, 955
autophosphorylation activity, acquisition by epidermal growth factor receptor, independence from post-translational glycosylation (human A431 cells), **153**, 96
cytosolic
partial purification and characterization (porcine spleen), **152**, 1123
regulation by polyamines and negatively charged polysaccharides (porcine spleen), **154**, 883
in FDC-P1 cells, stimulation by interleukin 3 (mouse), **154**, 991
insulin receptor-associated
activation by monoiodinated insulins: comparison of hepatic and muscular receptors (rat), **152**, 1353
analysis in liver of rats with non-insulin-dependent diabetes, **152**, 1015
modulation by vanadate and monoclonal antibodies to receptor β subunit (human), **152**, 1474
membrane, identification and characterization (*Neurospora crassa*), **155**, 59
phosphorylation of
and associated inhibition of $pp60^{c\text{-}src}$ (neonatal rat brain), **154**, 796
rabbit muscle glycogen synthase (bovine thymus), **155**, 52
$pp60^{c\text{-}src}$-associated activity, ATP-stimulated, detection in coronary extracts (bovine), **153**, 388
Proteinuria
reduction by cysteine proteinase inhibitor E-64 in experimental model of glomerulonephritis (rat), **155**, 1318
Proteoglycans
cartilage, interleukin-1-induced degradation, inhibition by transforming growth factor β (rabbit chondrocytes), **157**, 1352
low-molecular-weight, isolated from parietal pericardium, partial characterization (bovine), **151**, 480
sulfation
in cultured endothelial cells, reversible inhibition by chlorate (bovine), **154**, 365
inhibition by substrates of sulfation and sulfate analogs (HepG2 cells), **150**, 342
synthesis inhibition
by interleukin 1 *in vitro* (porcine cartilage), **154**, 421
synergistic, by ionophore A23187 and phorbol ester, mechanistic analysis (rabbit chondrocytes), **153**, 690
Proteoliposomes
functional reconstitution of alanine carrier after partial purification from rabbit intestinal brush border membranes, **152**, 1158
giant, preparation by freezing–thawing without detergent: reconstitution of biomembranes usually inaccessible to patch-clamp pipette microelectrode (rabbit, rat), **154**, 85
Proteolysis
effect on salivary mucin hydrophobicity: role of associated

and covalently bound lipids (rat), **151**, 1046
endosperm tubulin, generated domains, comparison with porcine neurotubulin (*Haemanthus katherinae*), **156**, 304
induced inactivation of heparin-binding growth factor I in endothelial cell cultures, protection by heparin (human, mouse), **152**, 432
by insulin receptor, analysis (rat liver), **156**, 30
limited
adrenodoxin reductase: evidence for domain structure (bovine adrenocortex), **152**, 177
associated structural and kinetic artifacts in affinity purification of deoxycytidine kinase, avoidance (human leukemic T-lymphoblasts), **156**, 92
discoidin I: detection of developmental changes in structural organization (*Dictyostelium discoideum*), **152**, 1332
lysosomal *N*-acetyl-β-hexosaminidase, impairment in fibroblasts from patients with infantile generalized *N*-acetylneuraminic acid storage disease, **152**, 83
membrane proteins, inhibition by synthetic calpain inhibitor (rat erythrocytes), **157**, 1117
140-kDa atrial natriuretic factor receptor by membrane-bound acidic metallo-endopeptidase (bovine adrenal cortex), **152**, 658
platelet actin-binding protein by calcium-dependent sulfhydryl protease, protection by phosphorylation (human), **151**, 355
role in solubilization and processing of membrane-bound acid α-glucosidase (human placenta), **151**, 1358
Proteose peptone
enhancement of tissue-type plasminogen activator production in diploid fibroblasts (human), **150**, 1230
Proteus mirabilis
intestinal, production of anorexigenic substances (rat), **153**, 1167
Prothrombin
activation, inhibition by factor IX and factor X peptides containing γ-carboxyglutamic acid (human), **152**, 1207
fragment 1–45, calcium-dependent binding to phospholipid vesicles, binding constant determination (bovine), **155**, 230
hydrophobic site, detection in calcium-stabilized conformer (human), **157**, 295
Protons
efflux from splenic lysosomes, induction by K^+ (mouse, rat), **156**, 211
Protoplasts
transmembrane electron transport, associated changes in intracellular redox and energy status (*Cuscuta* sp.), **156**, 940
Pseudomonas aeruginosa
outer membrane, demonstration of small pores by rate assay, **156**, 470
Psoriasis
affected fibroblasts, cAMP-dependent protein phosphorylation, effect of retinoic acid (human), **156**, 263
Pterins
7-substituted, identification in affected patient, **153**, 715
Putrescine
distribution in embryonic tissues, relationship to seed germination (corn), **153**, 881
metabolism in *Bacillus alcalophilus*, **150**, 185
role as intracellular messenger in β-adrenergic regulation of Ca^{2+} fluxes, $[Ca^{2+}]_i$, and membrane transport in cardiac myocytes (rat), **153**, 1179
Pyridine
oxidation by cytochrome P450-enriched *Streptomyces griseus* extracts, **157**, 1417
Pyridoxal 5′-phosphate
partial covalent labeling of band 3 protein, modification of bis(sulfosuccinimidyl)suberate crosslinking pattern of band 3 (human erythrocytes), **156**, 1215
Pyrocarbonic acid diethyl ester
modification of M1 muscarinic receptor histidyl residues, in analysis of ligand binding (rat cerebral cortex), **151**, 1069
Pyrogallol
hydrogen peroxide-dependent oxidation, in analysis of hydroperoxidase activity of lipoxygenase, **155**, 1075
Pyrophosphate–fructose-6-phosphate 1-phosphotransferase
potato tuber, relationship to major ATP-dependent phosphofructokinase of *Escherichia coli*, **154**, 113
L-Pyrroline-5-carboxylic acid
selective inhibition of protein synthesis in reticulocyte lysates (rabbit), **150**, 296
Pyrroloquinoline quinone
interaction with amino groups, detection by nitroblue tetrazolium reduction, **153**, 353
in nitrile hydratase active center, interaction with low-spin Fe(III) site (*Brevibacterium* R312, *Pseudomonas chlororaphis* B23), **154**, 522
Pyruvate
–lactate ratios in *Neurospora crassa*, regulation by cAMP, **150**, 365
transport in cardiac mitochondria, effect of doxorubicin (rat), **156**, 1302
Pyruvate dehydrogenase
β subunit, cDNA clone isolation (human liver), **150**, 904
purified complex, component X, properties (rat heart), **150**, 816
Pyruvate dehydrogenase phosphatase
stimulation by insulin mediator containing galactosamine, mannose, and D-chiroinositol (rat liver), **151**, 1416
6-Pyruvoyltetrahydropteridine synthase
in biopterin biosynthesis, mechanism, **151**, 512

Q

Quinacrine
effect on multidrug resistance and labeling of P-glycoprotein by vinblastine photoaffinity analog (human leukemic cells), **153**, 959
Quinine
effect on multidrug resistance and labeling of P-glycoprotein by vinblastine photoaffinity analog (human leukemic cells), **153**, 959

UNIVERSITY OF HAWAII LIBRARY

Quinolinate phosphoribosyltransferase (decarboxylating), *see* Nicotinate-nucleotide pyrophosphorylase (carboxylating)
Quinolinic acid
pyridine analogs, inhibition of bacterial quinolinate phosphoribosyltransferase, **152**, 559
Quinoproteins
pyrroloquinoline quinone locus, analysis by methoxatin detection with nitroblue tetrazolium redox reactions, **154**, 1330
Quisqualate
elevation of 1,4,5-trisphosphate levels in cerebral cortex slices: mass measurements by radioreceptor assay (rat), **157**, 684

R

R 59022
effect on [^{3}H]phosphatidic acid formation in response to formyl-methionyl-leucyl-phenylalanine (human neutrophils), **153**, 1097
potentiation of bombesin stimulation of protein kinase C and DNA synthesis (murine Swiss 3T3 cells), **155**, 561
Radiation
induced apoptosis in cultured fibroblasts, inhibition by tumor promoters (mouse), **155**, 324
ionizing, sensitivity of head and neck squamous carcinoma cells, role of altered poly(adenosine diphosphoribose) synthesis (human), **154**, 1041
Radiation inactivation analysis
molecular size of Na^+/H^+ antiport of renal brush border membranes (rat), **152**, 484
oligomeric structure of membrane-bound mitochondrial creatine kinase (rabbit heart), **153**, 1310
Recombination
homologous, between HIV DNAs in cultured cells, analysis of influencing factors (human), **157**, 1051
Reduction
disulfide bridge, effect on salivary mucin hydrophobicity: role of associated and covalently bound lipids (rat), **151**, 1046
NAD(P)H-dependent, 12-ketoeicosatetraenoic acid to 12(*R*)- and 12(*S*)-hydroxyeicosatetraenoic acids (rat hepatic microsomes), **156**, 1083
nitrite to nitric oxide by enteric bacteria, **157**, 106
Relaxant factor
endothelium-derived, and nitric oxide, released from cultured endothelial cells, quantitative and kinetic characterization (porcine aorta), **154**, 236
Relaxin
augmentation of cAMP levels in cultured anterior pituitary cells (rat), **148**, 1246; *erratum*, **150**, 1315
Renin
gene, associated restriction fragment length polymorphism, allele frequency in hypertensives (human), **150**, 219
release
in dynamic superfusion system of juxtaglomerular cells, inhibition by endothelin (rat), **157**, 1164
effect of atrial natriuretic factor (dog), **156**, 1070
from isolated glomeruli, inhibition by endothelin (rat), **155**, 1244
Reserpine
effect on multidrug resistance and labeling of P-glycoprotein by vinblastine photoaffinity analog (human leukemic cells), **153**, 959
Resistance
antitumor ether-linked phospholipids, development in HL-60 cells after differentiation to granulocytic form (human), **156**, 1
hydroxyurea, reversion, relationship to coamplification of ribonucleotide reductase M2 component, ornithine decarboxylase, and P5-8 genes (CHO cells), **154**, 975; *erratum*, **156**, 1419
insulin, induction by unprocessed insulin proreceptors with point mutation at cleavage site (human), **153**, 657
multidrug
effects of indole alkaloids (human leukemic cells), **153**, 959
in human and rodent cells, comparison, **153**, 598
Respiratory burst
in primed neutrophils, activation by fluoride independently of Ca^{2+} changes, phosphoinositide turnover stimulation, and protein kinase C translocation (human), **150**, 955
Respiratory tract
neonatal, washings, detection of rabbit uteroglobin-like protein (human), **152**, 1447
Restriction enzymes
DNAse I footprinting, **155**, 779
Restriction mapping
transthyretin gene from Israeli patient with familial amyloidotic polyneuropathy, confirmation of position 33 mutation, **153**, 198
Reticulocytes
intracellular pH and transferrin and iron uptake, effect of 4,4′-diisothiocyanostilbene-2,2′-disulfonic acid (rabbit), **150**, 1256
lysates, stimulation of bacterial M13 and M13am8H1R1 procoat protein assembly into canine pancreatic microsomes (rabbit), **153**, 498
protein kinase activity phosphorylating mRNA cap-binding protein, identification (rabbit), **153**, 340
Retina
histamine H_1 receptors, species differences, **150**, 316
insulin and insulin-like growth factor I cross-reactivity, analysis (bovine), **151**, 1105
light-induced phosphoinositide breakdown and structural alterations, enhancement by chronic lithium treatment (rat), **156**, 1111
Retinoic acid
augmentation of cellular retinol-binding protein mRNA levels in lung during retinol deficiency (rat), **156**, 712
cellular 16.2-kDa binding protein, purification and partial characterization (chicken embryo), **157**, 1302
effects on
cAMP-dependent protein phosphorylation in psoriatic fibroblasts (human), **156**, 263

melanotic expression, different susceptibilities of B16 melanoma cell variants (mouse), **155**, 773
protein kinase C in cultured intestinal crypt cells (rat), **154**, 278
protein synthesis in retinol-deficient testis, early events (rat), **151**, 53
induction of γ-glutamyl transpeptidase in epithelial cells *in vitro* (rat liver), **157**, 1039
Retinoids
specific binding protein, affinity gels for purification (human), **155**, 503
Retinol, *see* Vitamin A
Retroviruses
vector N2, prepared with amphotropic or xenotropic envelope, comparative infectivity in human hematopoietic progenitor cells, **151**, 201
Reverse transcriptase
HIV, inhibitor 3′-azido-3′-deoxythymidine, crystal structure: conformation and sandwiching of bases by azido groups, **152**, 351
Rhodamine 123
in analysis of induced activity alterations in isolated mitochondria (rat liver), **151**, 568
Rhodopsin
nitroxide-labeled, light-induced conformational changes, electron spin resonance study (bovine), **155**, 1412
Ribavirin
and tiazofurin, synergistic cytotoxic effect (rat 3924A hepatoma cells), **153**, 321
Ribonuclease
preferentially hydrolyzing cytokine-encoding mRNAs containing UA-rich instability sequences, assay technique (murine macrophages), **152**, 973
Ribonuclease A, *see* Pancreatic ribonuclease
Ribonuclease inhibitor
monoclonal antibodies to, isolation and characterization (human), **157**, 286
Ribonuclease T_1
Glu 46 residue, role in guanine base recognition, **150**, 68
Ribonucleoproteins
small cytoplasmic, storage of histone H4 mRNA during G_2 phase (*Physarum polycephalum*), **153**, 162
small nuclear
core protein enrichment in nuclear matrix (HeLa cells), **152**, 1383
U1, reconstituted, restoration of 5′ splice site cleavage activity of β-globin pre-mRNA (HeLa cells), **154**, 1010
Ribonucleotide reductase
detection in anaerobic *Escherichia coli*, **155**, 747
M2 component, and ornithine decarboxylase and P5-8, encoding genes, coamplification, relationship to hydroxyurea resistance reversion (CHO cells), **154**, 975; *erratum*, **156**, 1419
Riboprobe
cloned, detection of mycoplasmalike organism, **155**, 443
Ribosomes
eukaryotic, site of action of ribosome-inactivating proteins from plants, analysis, **150**, 1032
free, albumin synthesis, increase during acute-phase reaction (rat liver), **152**, 744
proteins from, role in specificity of rRNA cleavage by α-sarcin (*Escherichia coli*, yeast), **154**, 404
Ribosylation
ADP, induction by cholera toxin in GH1 cells, **150**, 323
Ribulose 1,5-bisphosphate
dependent carbon dioxide fixation in halophilic archaebacterium, analysis (*Halobacterium mediterranei*), **156**, 451
Ribulose-bisphosphate carboxylase
active site, alteration by site-directed mutagenesis and chemical modification (*Rhodospirillum rubrum*), **152**, 579
Ribulosebisphosphate carboxylase/oxygenase, *see* Ribulose-bisphosphate carboxylase
RNA
Alu sequence-containing transcript, induction by insulin in hepatoma cells (human), **156**, 1287
and DNA, levels in *Anaplasma marginale*-infected and uninfected erythrocytes during experimental anaplasmosis (bovine), **152**, 30
lupus-related transcript, homology to Abelson murine leukemia virus (mouse), **155**, 295
messenger
β_2-adrenergic receptor, regulation by glucocorticoids, requirement of glucocorticoid response elements in receptor gene 5′-noncoding region (hamster), **154**, 676
albumin, insulin-mediated post-transcriptional regulation (rat liver), **154**, 1081
aldose reductase, characterization (rat), **153**, 1051
amylase and protease zymogen, levels in isolated pancreatic acini, decrease associated with enzyme stimulation by *Pseudomonas aeruginosa* cytotoxin (rat), **152**, 688
amyloid protein precursor, three types in brain: differential expression in Alzheimer's disease (human), **157**, 472
angiotensin-converting enzyme, distinct forms for pulmonary and testicular isozymes, identification by cDNA cloning (rabbit), **155**, 678
aspartate aminotransferase, mitochondrial, nucleotide sequence and tissue distribution (human liver), **157**, 1309
cap-binding protein, phosphorylating protein kinase activity, identification (rabbit reticulocytes), **153**, 340
cap terminal structure recognition by peptide, mechanism: cooperative stacking and hydrogen bond-pairing interactions between m7GpppA and Trp–Leu–Glu, **154**, 199
cellular retinol-binding protein
detection in seminiferous tubule somatic cells (rat), **154**, 1174; *erratum*, **157**, 1444
pulmonary levels, retinoic acid-induced increase in retinol-deficient rats, **156**, 712
c-*fos*, accumulation level, role in cell proliferation renewal (mouse), **153**, 1090
Clara cell secretory protein, *in vitro* translation (rabbit lung), **153**, 470
c-*myc*, decrease in HL-60 cells, synergistic induction by 1,25-dihydroxyvitamin D_3 and tumor necrosis fac-

tor α, **152**, 1151
cyclooxygenase, levels in vascular cells *in vitro*, suppression by dexamethasone (rat), **157**, 1159
cytochrome b_5, nucleotide sequence (human liver), **156**, 576
cytochrome P450
ethanol-inducible, expression regulation, analysis (hamster liver), **150**, 304
synthesis in *Candida maltosa* grown on hexadecane, indirect induction by oxygen limitation, **150**, 859
cytochrome $P450_{17\alpha}$, levels in Leydig's cells, hormonal regulation (rat), **154**, 151
cytokine-encoding, containing UA-rich instability sequences, selective ribonuclease, assay technique (murine macrophages), **152**, 973
epidermal growth factor receptor
expression in regenerating liver (rat), **150**, 412
levels in T-47D breast cancer cells, regulation by progestin (human), **150**, 192
estrogen receptor
estrogen-induced increase in breast cancer cells (human), **155**, 943
levels in estrogen-responsive breast cancer cells, regulation by estrogen (human), **155**, 1113
expressed in F9 cells and down-regulated by tumor-promoting phorbol ester, encoding of transmembrane protein, **157**, 548
ferritin H chains, regulation by thyrotropin (rat thyroid), **150**, 287
follicle-stimulating hormone and LH β-subunits, colocalization by *in situ* hybridization with biotinylated probes (porcine anterior pituitary), **154**, 80
β-globin precursor, deficient 5′ splice cleavage activity of nuclear extract fraction, restoration by reconstituted U1 small nuclear ribonucleoprotein complex (HeLa cells), **154**, 1010
glucose transporter, alteration during tissue development, analysis with cloned cDNA (rat), **154**, 1204
γ-glutamyl transpeptidase from Hep G2 hepatoma cells, *in vitro* translation and processing (human), **154**, 1167
glutathione peroxidase
diminished expression in selenium-deficient liver (rat), **154**, 1024
hepatic levels, effect of selenium status (rat), **153**, 855
β-hexosaminidase α-chain, abnormality in Ashkenazi Jewish patients with Tay-Sachs disease: analysis of splicing defect due to exon–intron junctional mutation, **153**, 463
histone H4, storage as small cytoplasmic ribonucleoprotein during G_2 phase (*Physarum polycephalum*), **153**, 162
human thyroid-stimulating hormone α and β subunits, injection into *Xenopus* oocytes, induction of active hormone production, **152**, 703
interleukin 1α and 1β, and IL-1/epidermal cell thymocyte-activating factor, levels in adult heat-separated epidermis (human), **156**, 463
interleukin 6, lymphotoxin, and tumor necrosis factor, comparative expression patterns (human peripheral blood mononuclear cells), **153**, 1144
luteinizing hormone and FSH β-subunits, colocalization by *in situ* hybridization with biotinylated probes (porcine anterior pituitary), **154**, 80
malic enzyme, insulin-mediated post-transcriptional regulation (rat liver), **154**, 1081
ovarian basic fibroblast growth factor, tissue distribution (rat), **157**, 256
phosphorylase phosphatase catalytic subunit, immunoprecipitation of *in vitro* translation product (rabbit muscle), **156**, 1398
preproenkephalin A, ventricular levels, increase in cardiomyopathic hamsters, **155**, 449
preproenkephalin, detection in postmeiotic germ cells (rat testis), **151**, 664
protein kinase C, levels after treatment of WEHI-231 B-lymphoma cells with phorbol esters, **155**, 1311
protein S, synthesis in liver, identification of PSα gene as synthesis site (human), **157**, 1033
proto-*ret*, expression in adult and embryonic tissues (rat), **153**, 1290
retinol-binding protein, levels in cultured Sertoli cells, regulation by cAMP and retinol (rat), **152**, 1504
serum amyloid P component, C-reactive protein, and prealbumin, acute-phase response (murine liver), **155**, 554
signal peptide of nicotinamide nucleotide transhydrogenase, sequence analysis (bovine heart), **157**, 24
3′-untranslated region of rat uricase, identification of homologous human genomic sequence, **155**, 1266
thyrotropin-releasing hormone, developmental and circadian levels, in analysis of neuronal TRH synthesis (rat hypothalamus), **151**, 615
tropoelastin, identification of multiple forms (chicken embryo), **154**, 1054
uncoupling protein, structure determination (rat liver), **157**, 783
nuclear 7 S, hybridization to regulatory regions of c-*myc* and simian virus 40 genes (HeLa, 3T3 cells), **152**, 753
nucleolar binding protein, conserved glycine and dimethylarginine-rich sequence, detection in B-36 nucleolar binding protein (*Physarum polycephalum*), **155**, 1278
pre-messenger, β-globin, 5′ and 3′ splice sites, differential enzymatic accessibilities in splicing-competent HeLa cell nuclear extract, **150**, 517
ribosomal
cleavage by α-sarcin at α-sarcin site in absence of ribosomal proteins (*Escherichia coli*, yeast), **154**, 404
28 S
N-glycosidic bond at residue A-4324, cleavage by ribosome-inactivating proteins from plants, **150**, 1032
processing inhibition, association with synergistic cytocidal effect of interferon γ with tumor necrosis factor in HT-29 cells (human colon), **151**, 1180
satellite
arabis mosaic virus, nucleotide sequence: implications for circularity and self-cleavage, **154**, 318

cucumber mosaic virus-associated, cDNA clone, biological properties *in vivo* (tomato), **151**, 388
tobacco ringspot virus, mediation of phosphorothioate diester bond formation, **156**, 340
structure, effect on specificity of nucleolar 2′-*O*-methyltransferase (Ehrlich ascites tumor cells), **155**, 530
transfer
isoaccepting, for proline and glycine, distribution in collagenous and noncollagenous tissue (chicken), **150**, 148
phenylalanine
controlled degradation by spleen phosphodiesterase in presence of ethidium bromide (yeast), **152**, 477
and proline, identification as near-ultraviolet molecular targets triggering growth delay effect (*Escherichia coli*), **150**, 979
RNA polymerase
5-azido-UTP as substrate, characterization (*Escherichia coli*), **150**, 917
mitochondrial, preference for superhelical templates with mitochondrial promoters (human), **152**, 22
RNase L
activation by (2′,5′)-oligo(A), association with synergistic cytocidal effect of interferon γ with tumor necrosis factor in HT-29 cells (human colon), **151**, 1180
in peripheral blood mononuclear cells from cutaneous T-cell lymphoma patients, elevation by recombinant interferon α 2b treatment, **153**, 448; *erratum*, **155**, 538
RNA synthesis
effect of antibacterial agent DuP 721 (*Bacillus subtilis*), **150**, 965
inhibition by *Clostridium perfringens* enterotoxin, mechanistic analysis (Vero cells), **153**, 699
Root nodules
development, associated ferredoxin-dependent glutamate synthase in plant cell fraction, occurrence and properties (*Medicago sativa*), **156**, 1130
RU 486
interaction with renal glucocorticoid receptor, comparison with dexamethasone (rat), **153**, 365
stabilization of glucocorticoid receptor high-molecular-weight form containing 90-kDa nonsteroid-binding protein (rat thymus), **150**, 1221
Ruthenium red
inhibition of rapid Ca^{2+} release from isolated cardiac and skeletal sarcoplasmic reticulum membranes (dog, rabbit), **154**, 1
Ryanodine
functional removal of calcium store in smooth muscle cells (guinea pig), **152**, 417
inhibition of caffeine-induced aortic smooth muscle contraction, time and use effects (guinea pig), **154**, 219
Ryanodine receptors
complex, containing Ca^{2+} release channel, isolation from cardiac sarcoplasmic reticulum (dog), **151**, 441
purified from cardiac muscle, reconstitution in planar bilayers (dog), **152**, 308

S

Saccharomyces cerevisiae
α-factor-directed synthesis of *Bacillus stearothermophilus* α-amylase, **152**, 76
expression and secretion of cDNA-encoded human placental lysozyme, **150**, 794
human lysozyme folding and secretion, role of disulfide bonds, **152**, 962
mutant erg6, cholesterol biosynthesis, **155**, 509
Ras2 protein, phosphorylation by different protein kinases, **157**, 1182
strain 112, mutation resulting in accumulation of intermediates in RAS2 protein processing, identification, **151**, 1346
transfer into toluene–phospholipid water system, **151**, 1074
Salmonella typhi
siderophore production, analysis, **150**, 18
Salmonella typhimurium
chemotaxis, sensory transduction, role of phosphotransfer between proteins CheA and CheY, **151**, 891
Ra mutant, reactive factor from mice, identification of 28- and 70-kDa polypeptide components responsible for bactericidal activity, **152**, 636
Salt
high dietary levels, associated elevated intracellular Ca^{2+} in Dahl-sensitive rats, analysis with fura-2, **154**, 380
Saposin D
isolation from Gaucher spleen and characterization (human), **156**, 403
Sarafotoxin-b
receptors in brain, localization and characterization (rat), **157**, 1104
α-Sarcin
cleavage of bacterial and yeast ribosomal RNA at α-sarcin site in absence of ribosomal proteins (*Aspergillus giganteus*), **154**, 404
Sarcolemma
partially purified Ca^{2+} channels, incorporation into planar lipid bilayers (bovine heart), **152**, 1255
sodium–calcium exchange, stimulation by concanavalin A (rat heart), **154**, 245
vesicles, Ca^{2+} pump, guanine nucleotide- and inositol trisphosphate-induced inhibition (rat heart), **152**, 1111
Sarcophaga peregrina
development, role of sarcotoxin IA gene, **150**, 540
Sarcoplasmic reticulum
calpastitin binding, mechanism (bovine heart), **150**, 170
heavy fraction, calcium-release channels, interaction with caffeine, role of 170-kDa calcium-binding protein (rabbit skeletal muscle), **154**, 462
rapid Ca^{2+} release from membranes *in vitro*, effects of blockers (canine heart, rabbit skeletal muscle), **154**, 1
vesicles, incorporation into giant proteoliposomes by freezing–thawing without detergent: reconstitution of biomembranes usually inaccessible to patch-clamp pipette microelectrode (rabbit skeletal muscle), **154**, 85

UNIVERSITY OF HAWAII LIBRARY

Sarcotoxin IA
gene, role in development (*Sarcophaga peregrina*), **150**, 540
Schizophyllan
effects on interferon γ and interleukin 2 production by peripheral blood mononuclear cells (human), **155**, 650
Schizosaccharomyces pombe
mutants defective in synthesis of small cadmium-binding cadystin peptides, isolation and characterization, **151**, 32
Sclerosis
progressive systemic, fibroblasts from patients, inositol 1,4,5-trisphosphate formation, effect of bradykinin, **156**, 1077
Scorpion toxin receptors
associated with synaptosomal Na^+ channels, photoaffinity labeling (*Periplaneta americana*), **151**, 187
Scurvy
associated decrease in extracellular matrix synthesis, role of humoral factor (guinea pig), **152**, 1490
Secretory granules
chloride conductance/exchange pathways, analysis (rat parotid gland), **155**, 984
from pituitary, atrium, and adrenal medulla, isolation of neurocuprein-like protein (bovine), **155**, 1430
Selenium
deficient liver, diminished expression of glutathione peroxidase mRNA (rat), **154**, 1024
dietary status, effect on glutathione peroxidase mRNA levels (rat liver), **153**, 855
and vitamin E, deficient rats, respiratory ethane production, effect of 3-methylindole, **153**, 535
Selenotrisulfides
related thiol exchange reactions, analysis, **150**, 1149
Self-association
apolipoprotein A-I, effect of nonenzymatic glycation (human), **153**, 1060
interleukin 2, analysis (human), **152**, 879
Semen
detection of nerve growth factor (human), **155**, 482
Serine
^{14}C-labeled, derived sphingosine, turnover rate (CHO cells), **157**, 232
v-*rel* oncogene product/pp40 complex, phosphorylation (avian reticuloendotheliosis virus-transformed lymphoid cells), **152**, 441
Serine kinase
insulin-stimulated, in oocyte plasma membranes, characterization (*Xenopus*), **150**, 1176
Serine protease
subtilisin-like, homologous *KEX2* gene-encoded endopeptidase, identification (yeast), **156**, 246
Serotonin
agonist-induced release in platelets, effects of amiloride analogs (human), **154**, 101
effect on 1,4,5-trisphosphate levels in cerebral cortex slices: mass measurements by radioreceptor assay (rat), **157**, 684
induction of
inositol phosphate formation in cerebral cortex, inhibition by fluoride (rat), **155**, 664
phosphoinositide breakdown in cultured vascular smooth muscle cells, modulation by phorbol ester (rabbit), **153**, 51
secretion by platelets, protein kinase C-dependent, enhancement by cytochalasin E, **150**, 745
Serotonin *N*-acetyltransferase
stimulation by forskolin in pineal gland during late dark period (hamster), **155**, 209
Serous cells
tracheal gland, synthesis and secretion of albumin-like protein (bovine), **155**, 857
Sertoli cells
cultured, retinol-binding protein mRNA levels, regulation by cAMP and retinol (rat), **152**, 1504
immature, follicle-stimulating hormone-dependent secretion of receptor-reactive transforming growth factor β-like material *in vitro* (pig), **154**, 1222
Serum, *see also* Blood; Plasma
effect on
intracellular calcium levels in GH_3 pituitary tumor cells (bovine fetus), **156**, 1411
regulation of stably transfected c-*myc* hybrid gene in NIH3T3 cells, **157**, 379
glycophosphatidylinositol-anchored protein-solubilizing acid lipase, identification (human), **150**, 476
hybridoma growth factor/interleukin 6 levels in mice bearing methylcholanthrene-induced sarcoma, **157**, 575
insulin-like growth factor-binding proteins, recognition by polyclonal antibody to IGF inhibitor (human), **156**, 783
insulin-like growth factor II high-molecular-weight forms and binding protein, identification by immunoblotting (human), **152**, 1131
mediated induction of tyrosine aminotransferase in cultured chick embryo cardiac cells, role of endogenous polyamines (bovine), **152**, 497
-opsonized and nonopsonized particulate stimuli, activation of neutrophils, induction of inositol trisphosphate generation, relationship to calcium mobilization and superoxide anion release (human), **150**, 532
promotion of nerve growth factor synthesis in murine L cells (horse), **150**, 723
Serum amyloid A
synthesis in
cultured hepatocytes, effects of interleukins 1 and 6 (human), **155**, 112
hepatoma cell lines, regulation, role of interleukin 6 (human), **157**, 271
Serum amyloid P
Ca^{2+}-mediated hemagglutination, inhibition by glycosaminoglycans (human serum), **150**, 212
component gene, isolation and characterization (mouse), **155**, 1366
mRNA acute-phase response, comparison with C-reactive protein and prealbumin (murine liver), **155**, 554
Sex differences
hepatocyte plasma membrane fluidity (rat), **156**, 840

Shope fibroma virus
growth factor, epidermal growth factor/transforming growth factor activities in newborn mice, **154**, 497
Sialic acids
selective role in agonist interaction with M_2 muscarinic acetylcholine receptors (rat), **150**, 673
synthesis in *Lactobacillus plantarum*, analysis, **155**, 1126
Sialidase
in β-galactosidase–sialidase–protective protein complex, activation by cathepsin C *in vitro* (human placenta), **157**, 770
influenza virus, amino acid sequence, comparison with lysosomal sphingolipid activator protein 1, implications for SAP-1 structure, **155**, 32
Sialosylparagloboside
expression by oncogene-transformed 3Y1 cells, analysis (rat), **150**, 766
Sialyltransferase
in liver, plasma, and small intestine, increased activity after thermal injury (rat), **153**, 377
Siderophores
production by *Salmonella typhi*, analysis, **150**, 18
Signal transduction
leukotriene D_4-induced, inhibition by phorbol ester, rapid reversal by staurosporine (U-937 cells), **157**, 521
Simian virus 40
enhancer activity, inhibition by novobiocin (murine fibroblasts), **154**, 483
genes, regulatory regions, hybridization to nuclear 7 S RNAs (3T3 cells), **152**, 753
large T antigen, origin-binding forms, analysis for helicase activity (CV-1 cells), **153**, 249
Sincalide
binding sites in cerebral cortex of guinea pig and rat, discrimination by cyclic analogs, **154**, 1301
Skatole
effect on respiratory ethane production in selenium- and vitamin E-deficient rats, **153**, 535
Skin
adult heat-separated epidermis, analysis of interleukin 1/epidermal cell thymocyte-activating factor activity and IL-1 α and β mRNA levels (human), **156**, 463
7,12-dimethylbenz[*a*]anthracene tumorigenicity, augmentation by impairment of immunological surveillance (C3H mouse), **151**, 148
eicosanoid content, alteration by gammalinolenic acid-enriched diet (guinea pig), **154**, 967
[^{3}H]aflatoxin B_1 penetration *in vitro*, associated quantitative tritium exchange (human), **153**, 395
proteolytic enzyme in secretions, characterization (*Xenopus laevis*), **153**, 1193
S_6 kinase
amiloride-sensitive activation by angiotensin II in cultured vascular smooth muscle cells (rat), **151**, 583
Sodium
dependent Ca^{2+} uptake in sarcolemmal vesicles, stimulation by concanavalin A (rat heart), **154**, 245
–H^+ antiport
brush border membrane, molecular size estimation by radiation inactivation (rat kidney), **152**, 484
detection in gastric smooth muscle cells (dog), **151**, 473
inhibition and labeling by antagonist of muscarinic acetylcholine receptors (rat kidney), **157**, 921
membrane, role in ornithine decarboxylase induction by L-asparagine (rat hepatoma cells), **155**, 937
role in potentiation of thrombin-induced responses by epinephrine (human platelets), **151**, 178
and P_i, cotransport across renal cortical brush border membrane, potent selective inhibition by α-Cl-α-Br-phosphonoacetic acid (rat), **153**, 1152
Sodium benzoate
effects on hepatic mitochondrial urea cycle enzymes (rat), **151**, 872
Sodium butyrate
and novobiocin, induction of fibroblast-like transformation and c-*myc* gene alteration in hepatocytes (human), **155**, 305
Sodium channels
synaptosomal, associated scorpion toxin receptors, photoaffinity labeling (*Periplaneta americana*), **151**, 187
Sodium fluoride
activation of synaptosomal calcium influx (rat brain), **151**, 774
and thrombin, stimulation of protein phosphorylation and aggregation, comparison (human), **151**, 242
Sodium oleate
reduction of 5α-cholest-8(14)-en-3β-ol-15-one inhibitory effect on CHO-K1 cell growth, **156**, 689
Sodium pump
inhibition by protein kinase C-inhibitory anticancer ether lipids (rat brain), **157**, 1000
Sodium stibogluconate, *see* Antimony sodium gluconate
Sodium vanadate
modulation of insulin receptor-associated tyrosine kinase (human), **152**, 1474
Somatogenic receptors
growth hormone affinity, effect of lysine residue acetylation (human), **150**, 391
Somatostatin
analog BIM-23014, inhibition of small-cell lung carcinoma growth *in vitro* and *in vivo* (human), **153**, 81
cyclic analog containing *cis*-peptide bond mimic, evidence for bioactive conformation, **154**, 515
effect on protein kinase C in cultured intestinal crypt cells (rat), **154**, 278
inhibitory effect on basal and thyrotropin-stimulated [^{3}H]thymidine incorporation in thyroid lobes *in vitro* (rat), **154**, 417
Somatotropin
binding protein from human plasma, immunochemical similarity to rabbit hepatic growth hormone receptor, **152**, 573
dependent stimulation of osteoblast-like cells in serum-free cultures via local synthesis of insulin-like growth factor I (rat), **151**, 142
effects on hepatic cytochrome $P450_j$ (rat), **155**, 392
gene expression in transfected CV-1 cells (rat), **156**, 1166
lysine residues, acetylation, effect on affinity for somatogenic receptors (human), **150**, 391
related peptides in range M_r 13,000–18,000, identification

in anterior pituitary (mouse), **156**, 171
Somatotropin receptors
rabbit hepatic, immunochemical similarity to growth hormone-binding protein from human plasma, **152**, 573
Species differences
histamine H_1 receptor in retina, **150**, 316
Spectroscopy
Fourier transform infrared, *see* Fourier transform infrared spectroscopy
nuclear magnetic resonance, *see* Nuclear magnetic resonance
nuclear Overhauser enhancement and total correlation, ribonuclease A in water, in determination of complete ^{1}H NMR fingerprint, **154**, 1253
Spermatozoa
lack of active protein kinase C (sheep), **155**, 901
bicarbonate transport activities, decrease during epididymal maturation (pig), **157**, 1280
cathepsin L-containing, identification and conditions for unmasking the proteinase (guinea pig), **151**, 827
surface heparin-binding protein, identification (bovine), **153**, 289; *erratum*, **155**, 1485
Spermidine
distribution in embryonic tissues, relationship to seed germination (corn), **153**, 881
metabolism in *Bacillus alcalophilus*, **150**, 185
regulation of cytosolic protein-tyrosine kinase (porcine spleen), **154**, 883
role as intracellular messenger in β-adrenergic regulation of Ca^{2+} fluxes, $[Ca^{2+}]_i$, and membrane transport in cardiac myocytes (rat), **153**, 1179
Spermine
distribution in embryonic tissues, relationship to seed germination (corn), **153**, 881
effect on glycogen synthase phosphorylation by casein kinase I (rabbit muscle), **156**, 653
induced conformational change in actin: structural relationship between antigenic epitopes and cation exchange (rabbit, scallop), **152**, 368
metabolism in *Bacillus alcalophilus*, **150**, 185
regulation of cytosolic protein-tyrosine kinase (porcine spleen), **154**, 883
role as intracellular messenger in β-adrenergic regulation of Ca^{2+} fluxes, $[Ca^{2+}]_i$, and membrane transport in cardiac myocytes (rat), **153**, 1179
synthetic analog, DNA-binding properties, analysis, **152**, 1441
Sphingolipid activator protein 1
lysosomal, structural analysis by comparison with influenza virus neuraminidase, **155**, 32
Sphingomyelinase
activator saposin D, isolation from Gaucher spleen and characterization (human), **156**, 403
Sphingosine
prevention of phorbol ester down-regulation of protein kinase C (bovine lymphocytes), **151**, 94
rapid turnover after synthesis *de novo* from [^{14}C]serine (CHO cells), **157**, 232
Spinal cord
and brain, regional distribution of immunoreactive brain natriuretic peptide (pig), **155**, 733
Spirolactone
derivatives, receptor-mediated antimineralocorticoid action, mechanisms (rat liver), **150**, 449
Spleen
detection of
c-*abl* genomic locus hypermethylation (juvenile rat), **154**, 1061
growth factor promoting hepatocyte proliferation *in vitro* (rat), **153**, 1123
Spleen exonuclease
in presence of ethidium bromide, controlled degradation of yeast $tRNA^{Phe}$ (bovine), **152**, 477
Spleen phosphodiesterase, *see* Spleen exonuclease
Spores
ATP production during germination, role of glucose metabolism via Embden–Meyerhof pathway, analysis with mutant lacking hexokinase (*Bacillus megaterium*), **151**, 48
transfer into toluene–phospholipid water system, **151**, 1074
Squalene
hepatic levels in severe mevalonic aciduria: detection of normal values (human), **152**, 857
Stachyose
diffusion rate, in demonstration of small pores in outer membrane by rate assay (*Pseudomonas aeruginosa*), **156**, 470
Statine
diastereomeric models, differential binding in quantum mechanical modeling of aspartic proteinase interactions, **157**, 450
Statistical methods
simple formula for solvent-accessible areas of amino acid side chains, **156**, 792
Staurosporine
antiproliferative effects, role of protein kinase C inhibition (murine fibroblasts), **156**, 1250
effect on tyrosine-specific protein kinase activity of insulin and insulin-like growth factor I receptors (human placenta), **157**, 955
induction of protein kinase C association with erythrocyte membranes (human), **154**, 1273
inhibition of
phorbol ester induction of ornithine decarboxylase and tumor promotion (murine skin), **157**, 9
platelet aggregation, stimulus dependence (human), **151**, 542
rapid reversal of phorbol ester inhibition of leukotriene D_4-induced signal transduction (U-937 cells), **157**, 521
Stefins
A and B, effects of cathepsins D, H, and L (human), **154**, 765
Stem cells
hemopoietic, multipotent, *in vitro* maintenance by ATP in absence of interleukin 3, mechanism, **152**, 1173
Steroid receptors
52-kDa, identification by cloning and sequence analysis (human testis), **155**, 971

Steroid sulfatase
homology with glucosamine-6-sulfatase (human), **157**, 218
Sterols
content in clavine-producing *Claviceps purpurea* strains, effect of clomiphene, **152**, 190
Stomach
mucosa, detection of pancreatic-type phospholipase A_2 (rat), **151**, 1188
pentagastrin-stimulated gastric acid secretion after pyloric ligation, inhibitory effect of neurotensin (rat), **152**, 231
peptic cells, partial agonist activity of bombesin receptor antagonist [Leu^{14}-Ψ-CH_2NH-Leu^{13}]bombesin (frog), **157**, 1154
smooth muscle cells, detection of Na^+/H^+ antiport (dog), **151**, 473
vasoactive intestinal peptide receptors, pharmacology and molecular identification (human), **151**, 939
Strain differences
antibody responses to αs1-casein, analysis with proteolytic and synthetic peptides (mouse), **154**, 876
ornithine decarboxylase in kidney: size heterogeneity (mouse), **151**, 450
Streptomyces griseus
cytochrome P450-enriched extracts, oxidation of xenobiotics, **157**, 1417
Streptomyces hygroscopicus
hyg gene 5′ region, promoter activity, analysis, **151**, 270
Streptomycin
and other aminoglycosides, inhibition of protein synthesis in polyamine-requiring bacterial strains (*Escherichia coli*), **150**, 947
Streptozocin
induced diabetes
associated decrease in motor nerve conduction velocity, inhibition by prostaglandin E1 analog (rat), **150**, 225
enhancement of apolipoprotein E synthesis and secretion by injured sciatic nerves (rat), **155**, 283
Streptozotocin, *see* Streptozocin
Stress
induced gastric ulcer, suppression by metallothionein-II intravenous administration (rat), **151**, 725
Submaxillary gland
identification of 13- and 53-kDa nerve growth factor forms (mouse), **152**, 1008
Substance P
antagonist activity of N-acylated pentapeptides, analysis (guinea pig ileum), **156**, 323
Substance P receptors
IM-9 lymphoblast, processing: biosynthetic and degradation studies with monoclonal anti-receptor antibody (human), **151**, 535
Substrates
alternative, in kinetic distinction between rapid-equilibrium random and abortive ordered enzyme mechanisms, **152**, 406
Subtilisin
isoinhibitors, isolation and characterization from granulocytic fraction of neutrophilic granulocytes (horse), **154**, 1107
related serine proteases, homologous *KEX2* gene-encoded endopeptidase, identification (yeast), **156**, 246
Succinate–CoA ligase
ADP- and GDP-forming, detection in bloodstream and procyclic forms (*Trypanosoma brucei*), **151**, 257
Succinate dehydrogenase
mitochondrial, inhibition by T-2 mycotoxin, **151**, 809
Succinate thiokinase, *see* Succinate–CoA ligase
Sucrose
dietary, prevention of changes in myosin isoenzymes and sarcoplasmic reticulum Ca^{2+}-ATPase in pressure-overloaded heart (rat), **156**, 917
endocytosis by cultured hepatocytes, monensin effects (rat), **152**, 1275
Sucrose monolaurate
effects on amphotericin B binding to sterols and cytotoxicity (murine erythrocytes, fibroblasts), **154**, 954; *erratum*, **156**, 1061
Sugars
–lectin combining sites, number per monomeric unit (rabbit, rat liver), **155**, 1444
Sulfate
inorganic, increased uptake in skin fibroblasts from cystic fibrosis patients, **152**, 99
Sulfation
bile acids in primary monolayer cultures of hepatocytes (rat), **154**, 1114
proteins, glycoproteins, and proteoglycans, inhibition by substrates of sulfation and sulfate analogs (HepG2 cells), **150**, 342
proteoglycans in cultured endothelial cells, reversible inhibition by chlorate (bovine), **154**, 365
tyrosine residues, effect on secretion of α_2-antiplasmin and C4 (HepG2 cells), **151**, 417
Sulfhydryl groups
essential, detection in partially purified 2,3-oxidosqualene-lanosterol cyclase (porcine liver), **151**, 1378
generated by thioester bond cleavage, role in C3–liposome binding and subsequent initiation of alternative complement pathway activation, **151**, 743
in proteins, reaction with *S*-nitrosoglutathione, analysis, **152**, 916
Sulfhydryl protease
calcium-dependent, proteolysis of platelet actin-binding protein, protection by phosphorylation (human), **151**, 355
Sulfite
in removal of 18-, 23-, and 33-kDa proteins of photosystem II at alkaline pH, **152**, 612
Sulfoethyl aspartamide
strong cation-exchange column, in analysis and purification of deblocked N-terminal pyroglutamyl peptides, **156**, 910
Sulfotransferase
sulfation of salivary mucins: structural features of ^{35}S-labeled oligosaccharides (rat), **157**, 61
Sulfur
–iron centers, involved in methanogenic electron transfer, identification (*Methanobacterium thermoautotrophicum*), **153**, 87

SUN 1165
effects on ischemia-induced mitochondrial dysfunction and leakage of lysosomal enzymes (canine heart), **157**, 433
Superoxide dismutase
deficient *Escherichia coli* strain, oxygen enhancement ratio, **150**, 866
disproportionation by copper(II)ethylenediaminetetraacetate, **150**, 252
effects on cytosolic free calcium concentration in cultured aortic endothelial cells (pig), **152**, 301
gene expression, analysis in acatalasia fibroblasts (human), **153**, 59
generation
capacity, specific activation by concanavalin A during U937 differentiation (human), **151**, 802
by neutrophils, inhibition by heat shock: associated NADPH oxidase inhibition (human), **154**, 179
levels
during estrous cycle and induction in ovary by lutropin, analysis (rat), **157**, 146
in *Neurospora crassa*, relation to heat shock-induced thermotolerance, **156**, 1097
reduction of *p*-iodonitrotetrazolium, analysis, **150**, 1294
release from
bone marrow-derived macrophages, effects of zymosan and phorbol ester (rat), **151**, 641
neutrophils activated by serum-opsonized and nonopsonized particulate stimuli, relationship to inositol trisphosphate generation (human), **150**, 532
role in cutaneous porphyrin photosensitization, *in situ* evidence (mouse), **151**, 1054
Superoxide radicals
generation
in monocyte-derived macrophages in culture, stimulation by platelet-activating factor (human), **156**, 1293
in neutrophils
N-formyl-methionyl-leucyl-phenylalanine-stimulated, temperature-dependent inhibition by C-I and H-7 (human), **156**, 1376
regulation by ATP, ATPγS, and adenosine, differing calcium requirements (human), **154**, 746
in tumor cells, polyunsaturated fatty acid-stimulated, role in specific cytotoxicity mechanism and applicability as model for tumor necrosis factor (mouse), **155**, 1033
levels during estrous cycle, measurement (rat), **157**, 146
measurement with sulfonated phenyl isothiocyanate cytochrome *c* (horse), **156**, 1175
paramagnetic, direct detection in adriamycin-perfused heart (rat), **153**, 275
scavengers, specificity and efficiency assessment by luminol-enhanced chemiluminescence, **150**, 39
Suppressor factors
purification to homogeneity and biochemical characterization (human malignant T cells), **150**, 702
Swainsonine
enhancement of mitogen-induced interleukin 2 production and receptor expression in lymphocytes (human), **151**, 859
stimulation of DNA synthesis in lymphocytes (mouse), **150**, 615
Synaptophysin
cytoplasmic domain, similarity to pattern of repeating aromatic residues in bovine hepatic synexin, **152**, 1298
Synaptosomes
Ca^{2+} uptake
activation by sodium fluoride (rat brain), **151**, 774
histamine-stimulated, mechanism: activation of calcium channels (rat brain), **153**, 1136
glucose transporter, characterization (rat brain), **155**, 685
incorporation into giant proteoliposomes by freezing–thawing without detergent: reconstitution of biomembranes usually inaccessible to patch-clamp pipette microelectrode (rat brain), **154**, 85
Na^+ channels, associated scorpion toxin receptors, photoaffinity labeling (*Periplaneta americana*), **151**, 187
Synexin
pattern of repeating aromatic residues, similarity to synaptophysin cytoplasmic domain (bovine liver), **152**, 1298
Synoviocytes
elastase expression, effects of cytokines and growth factors (human), **155**, 786
Systemic lupus erythematosus
related transcript, homology to Abelson murine leukemia virus (mouse), **155**, 295

T

Tay-Sachs disease
in Ashkenazi Jewish patients, abnormal β-hexosaminidase α-chain mRNAs: analysis of splicing defect due to exon–intron junctional mutation, **153**, 463
T-cell receptors
β-chain gene loci, D_β–J_β rearrangement in T-cell leukemia patient, analysis: excision of intervening sequence as linear molecule, **152**, 257
Temperature
effect on type III procollagen secretion by Ehlers-Danlos syndrome type IV fibroblasts (human), **150**, 140
high, associated injury, induction of increased sialyltransferase activity (rat liver, plasma, small intestine), **153**, 377
low, activation of 5,8,11,14,17-*cis*-eicosapentaenoic acid production by fungal mycelia (*Mortierella alpina*), **150**, 335
Terbium
luminescence, in analysis of adriamycin interactions with Ca^{2+}-binding site (GH3/B6 pituitary tumor cells), **151**, 679
Terbutaline
induced down-regulation of β-adrenoceptors, prevention by ketotifen (guinea pig lung), **152**, 1221
Terminal deoxynucleotidyltransferase, *see* DNA nucleotidylexotransferase
Testis
retinol-deficient, protein synthesis, early effects of retinol

and retinoic acid (rat), **151**, 53
seminiferous tubule somatic cells, detection of cellular retinol-binding protein mRNA (rat), **154**, 1174; *erratum*, **157**, 1444
specific alcohol dehydrogenase, isolation, characterization, and developmental changes (hamster), **156**, 38
vas deferens, biological responses to [^{3}H]propionyl-neuropeptide, comparison with binding in rabbit aortic membranes (rat), **151**, 1213
Testosterone
aromatization and 19-hydroxylation by cytochrome P450 (rat brain), **150**, 311
effect on tumor necrosis factor receptor affinity and cytotoxicity (human MCF-7 cells, murine L-M cells), **153**, 402
production in Leydig's cells, stimulatory effects of (−)isoproterenol, β-adrenergic receptor-mediated, characterization (mouse), **151**, 1454
Tetracaine
analog, membrane partitioning-associated hydrolysis, rate monitoring by membrane spin label spectra, **152**, 344
3,4,5,6-Tetrachloro-1,2-benzoquinone, *see o*-Chloranil
2,3,7,8-Tetrachlorodibenzo-*p*-dioxin, *see* Dioxin
Tetracycline repressor
DNA-binding domain, sequence comparison with estrogen receptor (human), **150**, 463
12-*O*-Tetradecanoylphorbol-13-acetate
activation of phosphatidylethanol and phosphatidylglycerol synthesis by phospholipase D in HL-60 cell lysates, **155**, 249
with/without arachidonic acid, desensitization of pituitary gonadotropes (rat), **153**, 919
and arginine vasopressin, synergism in stimulation of insulin secretion and phosphatidylcholine metabolism in insulinoma cells (rat), **151**, 717
down-regulated mRNA in F9 cells, encoding of transmembrane protein (mouse), **157**, 548
down-regulation of protein kinase C
in Chediak-Higashi syndrome (beige mouse), **153**, 648
prevention by sphingosine (bovine lymphocytes), **151**, 94
effect on
c-*mos* expression in undifferentiated teratocarcinoma cells (mouse), **154**, 339
diacylglycerol generation and phosphatidylcholine synthesis and hydrolysis (BC3H-1 myocytes), **154**, 1345
epidermal protein synthesis *in vivo*: stimulation of elongation factor 2 phosphatase activity (mouse), **153**, 1129
parathyroid hormone-degrading activity (opossum renal cells), **157**, 908
platelet-derived growth factor- or angiotensin II-induced phospholipase C-mediated phosphoinositide hydrolysis in vascular smooth muscle cells (rabbit), **156**, 846
induction of
biological effects in murine skin, inhibition by cyclosporines D and H, **150**, 545
ornithine decarboxylase and tumor promotion, inhibition by staurosporine (murine skin), **157**, 9
inhibition of
cytochrome P450 induction by phenobarbital: evidence for protein kinase C regulation of induction (rat liver), **153**, 728
insulin secretion after chronic stimulation of fetal pancreas (human), **151**, 1269
radiation-induced apoptosis in cultured fibroblasts (mouse), **155**, 324
and interleukin 1, comparative effects on rheumatoid cell fructose 2,6-bisphosphate levels and prostaglandin E production (human), **150**, 349
modulation of serotonin-stimulated phosphoinositide breakdown in cultured vascular smooth muscle cells (rabbit), **153**, 51
and norepinephrine, differential effects on α_1-adrenergic receptor number and surface accessibility in DDT_1 MF-2 smooth muscle cells, **156**, 924
sensitivity of bombesin- and platelet-derived growth factor-induced phospholipase C-mediated hydrolysis of phosphoinositides to, comparison (murine NIH 3T3 cells), **152**, 285
stimulation of fibronectin-mediated cell adhesion (CHO cells), **155**, 603
Tetrahydrobiopterin
biosynthesis: studies on mechanism of 6-pyruvoyltetrahydropteridine synthase, **151**, 512
identification in *Drosophila melanogaster*, **152**, 49
nerve growth factor-induced transient increase (PC12h cells), **153**, 382
Tetrahydrocannabinol
Δ^8 and Δ^9 isomers, cerebral microsomal oxidation (guinea pig, mouse, rabbit, rat), **157**, 75
Δ^8-Tetrahydrocannabinol-11-oic acid
production by hepatic microsomal oxidation of 11-oxo-Δ^8-tetrahydrocannabinol, oxygenation mechanism (mouse), **153**, 779
Tetrahydrofolate synthase
hepatic C_1, expression, effect of nitrous oxide (rat), **157**, 245
5,6,7,8-Tetrahydropterin
identification in *Drosophila melanogaster*, **152**, 49
Tetrahymena pyriformis
2-aminoethylphosphonate biosynthetic pathway, analysis, **153**, 177
Tetramethylbenzidine
hydrogen peroxide-dependent oxidation, in analysis of hydroperoxidase activity of lipoxygenase, **155**, 1075
Tetramethylphenylenediamine
hydrogen peroxide-dependent oxidation, in analysis of hydroperoxidase activity of lipoxygenase, **155**, 1075
Tetraphenylboron
effect on sarcoplasmic reticulum Ca^{2+}-dependent ATPase (rabbit), **151**, 1093
Tetrathymidylates
α- and β-anomeric, covalently linked to oxazolopyridocarbazolium, poly(rA) binding parameters, **154**, 252
β-Thalassemia
induction by T → A mutation within ATA box (human), **153**, 741

Thapsigargin
tumor-promoting, phosphorylation of epidermal growth factor receptor at threonine 669 (human A431 cells), **157**, 740
Thermogenesis
cellular, mechanism, role of mitochondrial light fraction (rat liver), **151**, 1241
Thermotolerance
heat shock-induced, relation to peroxidase and superoxide dismutase levels (*Neurospora crassa*), **156**, 1097
Thiamin triphosphatase
anion dependency and irreversible inhibition by 4,4′-diisothiocyanostilbene-2,2′-disulfonic acid (eel electric organ), **154**, 942
Thioacetamide
induction of hepatic necrosis, role of lysophosphatidylcholine (rat), **154**, 803
Thiol exchange reactions
involving selenotrisulfides, analysis, **150**, 1149
Thiol groups
associated reactivity of actin in presence of ATP analogs, analysis, **155**, 962
Thiol peroxyl radical
cysteine, formation from thiyl radical reaction with molecular oxygen, ESR study, **155**, 405
Thioredoxin
fragment 31–36, reduction by lipoamide, subsequent reduction of oxidized protein (*Escherichia coli*), **150**, 156
reduced, as physiological cofactor for vitamin K epoxide reductase, assessment (bovine, rat hepatic microsomes), **155**, 1248
2-Thiouracil
interaction with horseradish peroxidase, **153**, 904
Threonine
residue 669 in epidermal growth factor receptor, identification as major site of phosphorylation by tumor promoter thapsigargin (human A431 cells), **157**, 740
site of calmodulin phosphorylation by adrenal cortex cytosol (guinea pig), **156**, 1333
Thrombin
complexes with secreted platelet proteins, analysis (human), **151**, 9
inactivation by water-soluble carbodiimides: characterization of essential carboxyl group (bovine), **151**, 709
induction of
changes in tubulin phosphorylation, analysis (human platelets), **151**, 1250
phosphatidylethanol formation: evidence for phospholipase D activation (human platelets), **156**, 1090
platelet granule secretion, effect of phorbol ester (human), **156**, 1257
protein phosphorylation and serotonin release in platelets, effects of amiloride analogs (human), **154**, 101
responses in platelets, potentiation by epinephrine, role of Na^+/H^+ antiport (human), **151**, 178
and other stimuli, induced platelet aggregation, stimulus-dependent inhibition by protein kinase C inhibitors (human), **151**, 542
and sodium fluoride, stimulation of protein phosphorylation and aggregation, comparison (human), **151**, 242
stimulated platelets, protein kinase C activation, localization (human), **156**, 149
Thrombosis
therapy, implications of fibrin clot targeting with magnetic urokinase (human), **152**, 739
Thrombospondin
identification in ovine cartilage and synthesis by bovine chondrocytes, **153**, 708
submitogenic levels, activation of S_6 kinase in cultured vascular smooth muscle cells (human), **150**, 278
Thromboxane A_2
production by platelets, effect of aggregation inhibition (human), **156**, 823
and prostaglandin H_2, receptor-binding properties in washed platelets, comparison (human), **157**, 733
Thromboxane A_3
formation *in vivo* after trieicosapentaenoyl-glycerol intravenous infusion (human), **151**, 1386
Thromboxane A_2 receptors
in cultured smooth muscle cells, characterization (rat aorta), **150**, 1170
identification in endothelial cells (rat aorta), **151**, 1352
Thymidine
intracellular levels and transport, effects of *Clostridium perfringens* enterotoxin, role in macromolecular synthesis inhibition (Vero cells), **153**, 699
tritiated
basal and thyrotropin-stimulated incorporation in thyroid lobes *in vitro*, inhibition by somatostatin (rat), **154**, 417
incorporation into DNA of organ-cultured adrenal explants, effects of corticotropin and cysteamine (rat), **157**, 95
Thymidylate synthase
interaction with 5′-phosphates of 3′-azido-3′-deoxythymidine and 3′-azido-2′,3′-dideoxyuridine, analysis (*Hymenolepis diminuta*, mouse), **155**, 1418
Thymocyte-activating factor
epidermal cell, and IL-1α and IL-1β mRNA, levels in adult heat-separated epidermis (human), **156**, 463
Thymosin β_{10}
cDNA, sequence analysis (human kidney), **152**, 862
Thymus
detection of
atrial natriuretic peptide precursor material (rat), **155**, 700
5-hydroxymethylcytosine DNA glycosylase in extract (bovine), **151**, 1173
Thyroglobulin
antibody IgG, detection in healthy humans, **155**, 224
Thyroid
cells in suspension culture, maintenance by dimethyl sulfoxide: facilitation of hormone synthesis and release (human), **155**, 100
FRTL-5 cells
insulin-like growth factor I-induced increase of c-*fos* expression by activation of c-*fos* promoter (rat), **151**, 1194

proliferation regulation by cholera toxin B subunit, mechanism independent of membrane receptor function modulation (rat), **157**, 605
[^{3}H]thymidine incorporation *in vitro*, basal and thyrotropin-stimulated, inhibition by somatostatin (rat), **154**, 417
inositol phosphate production and cytoplasmic free calcium in cultured cells, effects of epidermal growth factor (pig), **151**, 530
insulin-like growth factors in cultured cells, biologic activity, receptors, and production (sheep), **154**, 861
Thyroid-stimulating hormone, *see* Thyrotropin
Thyrotropin
active form, production from α and β subunit mRNAs in *Xenopus* oocytes (human), **152**, 703
regional distribution in anterior pituitary, age-related changes (male rat), **152**, 1213
regulation of ferritin H chain mRNA levels (rat thyroid), **150**, 287
stimulated [^{3}H]thymidine incorporation in thyroid lobes *in vitro*, inhibition by somatostatin (rat), **154**, 417
Thyrotropin-releasing hormone
neuronal synthesis: developmental and circadian TRH mRNA levels (rat hypothalamus), **151**, 615
stimulation of inositol phosphate production in GH_4C_1 pituitary tumor cells, comparison with bombesin, **154**, 654
Thyrotropin-releasing hormone receptors
in prolactin-producing pituitary tumor cells, 64-kDa protein as candidate (rat), **157**, 875
Thyroxine
L-form
inhibition of Ca^{2+}/calmodulin-induced activation of myosin light-chain kinase (chicken, rabbit), **152**, 270
and 3,3′,5-L-triiodothyronine, effects on tyrosinase induction by imidazole in cultured B16/C3 melanoma cells, comparison (mouse), **155**, 1293
synthesis and release by thyroid cells in suspension culture, facilitation by dimethyl sulfoxide (human), **155**, 100
Tiazofurin
and ribavirin, synergistic cytotoxic effect (rat 3924A hepatoma cells), **153**, 321
Tin-protoporphyrin
inhibition of hepatic heme oxygenase in tumor-bearing mice, prevention of decline in heme and cytochrome P450 levels, **150**, 822
Titin
polypeptides, sedimentation equilibrium in guanidine hydrochloride (rabbit skeletal muscle), **150**, 1155
α-Tocopherol, *see* Vitamin E
Toluene
oxidation by cytochrome P450-enriched *Streptomyces griseus* extracts, **157**, 1417
–phospholipid–water ternary system, transfer of spores, bacteria, and yeast into: preservation of bacterial respiratory chain, **151**, 1074
Tooth
matrix, dissociative extraction of bone-inductive protein osteogenin and partial purification by heparin affinity chromatography (rat), **157**, 1253
Topoisomerase
effects of genistein (NIH 3T3 cells), **157**, 183
type I, partial amino acid sequence, comparison with human and yeast enzymes (rat), **154**, 358
Nα-p-Tosyl-L-arginine methyl ester
hydrolysis by insulin receptor incubated with trypsin (rat liver), **156**, 30
Tosyl-lysyl chloromethylketone
in detection of conformational changes in adenylate cyclase catalytic unit induced by receptor and G-protein stimulation (rat striatum), **156**, 855
α-Toxin
permeabilized arterial smooth muscle, myofilament Ca^{2+} sensitivity, augmentation by norepinephrine and GTP-γ-S (rabbit), **157**, 677
Toxins, *see also specific toxins*
Clostridium spiroforme, binary, ADP-ribosylation of cellular actin, **152**, 1361
lethal, from *Heloderma horridum horridum* venom, purification and characterization, **154**, 613
Pseudomonas aeruginosa, stimulation of amylase and protease zymogen secretion in isolated pancreatic acini, associated decrease in mRNA levels (rat), **152**, 688
Tracheal gland
serous cells, synthesis and secretion of albumin-like protein (bovine), **155**, 857
Transcription
apolipoprotein A-I and A-IV genes, effect of triiodothyronine (rat liver), **154**, 997
block caused by left-handed Z-form segment in supercoiled DNA, removal by nonhistone protein HMG1 (porcine thymus), **153**, 334
cytochrome P450 gene, elongation regulation by heme (rat liver), **151**, 737; *erratum*, **152**, 1511
heat-shock protein hsp70 gene in peripheral blood mononuclear cells, age-related changes (human), **157**, 580
Ia-associated invariant chain gene in chronic lymphocytic leukemia cells, detection of multiple initiation sites (human), **152**, 184
interferon genes *in vivo*, modulation by positive and negative cellular factors (human epithelioid 293 cells), **154**, 1338
interleukin 1β gene, induction by phorbol ester and inhibition by dexamethasone (U937 cells), **156**, 269
interruption, role in c-*myc* regulation during HL-60 differentiation (human), **151**, 574
pro-opiomelanocortin gene in pheochromocytoma, initiation at sites upstream from normal site used in pituitary (human), **155**, 895
pS2 gene, estrogen activation, mediation by 5′ flanking region (human MCF-7 cells), **151**, 306
rDNA, putative termination sites (rice), **157**, 68
selective, insulin-regulated gene in hepatoma cell nuclear extracts (rat), **153**, 116
Transcription factor SII
augmentation and stable expression in HIV-1-infected CD4-positive cells (human), **155**, 1346
Transdifferentiation
pancreas to liver in adult model, near-total conversion (rat), **156**, 131

Transduction
sensory, in bacterial chemotaxis, role of phosphotransfer between proteins CheA and CheY (*Salmonella typhimurium*), **151**, 891
Transfection
DNA into lymphoblastoid cells by electropermeation with square shaped electric impulsions (human), **151**, 982
N-*ras* gene into PC12 cells, effect on cell morphology and c-*fos*, c-*myc*, and ornithine decarboxylase expression, **150**, 1185
Transferrin
effect on protein kinase C in cultured intestinal crypt cells (rat), **154**, 278
uptake by reticulocytes, effect of 4,4′-diisothiocyanostilbene-2,2′-disulfonic acid (rabbit), **150**, 1256
Transferrin receptors
antibodies disulfide-linked to methotrexate, cytotoxicity enhancement by monensin (human), **150**, 104
expression in WISH cells sensitive to interferon γ antiproliferative effect, reduction by IFN-γ, **153**, 897
Transformation
Dictyostelium discoideum, competence, analysis of cell cycle dependency, **154**, 54
Epstein–Barr virus-induced, in peripheral blood mononuclear cells from cutaneous T-cell lymphoma patients, reduction by recombinant interferon α2b treatment, **153**, 448; *erratum*, **155**, 538
fibroblast-like, induction in hepatocytes by novobiocin and butyrate (human), **155**, 305
fibroblasts
with c-*myc* gene, role of GD3 ganglioside, **150**, 760
embryonic, c-H-*ras* oncogene-induced, inhibition by cotransfected polynucleotides with alternating purine–pyrimidine sequences (rat), **152**, 449
NIH 3T3, by cloned *hst* gene from normal human leukocyte DNA, **151**, 965
with various oncogenes, induction of sialosylparagloboside neosynthesis, **150**, 766
lymphocytes by Epstein–Barr virus, effect of carboxyethyl γ-aminobutyric acid on establishment and growth (human), **150**, 931
malignant, sensitive 47-kDa collagen-binding heat-shock protein, characterization (chicken embryo), **153**, 428
ras-oncogenic, reduction of diacylglycerol kinase translocation (murine NIH/3T3 cells), **154**, 959
tobacco with mammalian metallothionein gene, **150**, 640
Transforming growth factor α
induction of c-*fos* and c-*myc* expression in C3H 10T1/2 fibroblasts (mouse), **152**, 216
Shope fibroma virus growth factor-associated activity in newborn mice, **154**, 497
Transforming growth factor β
activation of protein kinase C in cerebral microvessels (immature rat), **150**, 575
effect on
epidermal growth factor-induced proliferation of cultured aortic smooth muscle cells (rat), **157**, 301
expression of elastase activity (human dermal fibroblasts, synoviocytes; rabbit articular chondrocytes), **155**, 786
proliferation and c-*fos* expression in EL2 and NIH-3T3 fibroblasts, comparison (mouse, rat), **151**, 298
protein kinase C in cultured intestinal crypt cells (rat), **154**, 278
high-yield purification from platelets (human), **157**, 16
induction of fibroblast proliferation, role of G-proteins (mouse), **152**, 1228
inhibition of interleukin-1-induced protease activity and cartilage proteoglycan degradation (rabbit chondrocytes), **157**, 1352
recombinant, elastogenic effect in aortic smooth muscle cells (pig), **154**, 895
related material, receptor-reactive, follicle-stimulating hormone-dependent secretion by immature Sertoli cells in primary culture (pig), **154**, 1222
repression of proto-oncogene c-*myc* (human colon carcinoma), **150**, 711
stimulation of monocyte migration and expression of angiogenic activity (human), **157**, 793
Transglutaminase, *see* Protein-glutamine γ-glutamyltransferase
Translation
Clara cell secretory protein mRNA *in vitro*, analysis (rabbit lung), **153**, 470
defective, insulin-like growth factor I during overexpression by synthetic gene containing low-frequency codons (*Escherichia coli*), **155**, 518
γ-glutamyl transpeptidase from Hep G2 hepatoma cells, *in vitro* analysis (human), **154**, 1167
inhibition *in vitro* by adenosine antibodies, **155**, 1381
Translocase
glucose 6-phosphate-specific, induction by dexamethasone *in vitro*, effect of insulin (2S FAZA hepatoma cells), **153**, 307
Translocation
c-*myc*/Jα, analysis of involved Jα region: relationship to T-cell receptor α, β, and γ gene rearrangements (human lymphoma), **154**, 550
proteins, signal sequence-dependent, prediction in minicell system (*Escherichia coli*), **150**, 371
Transthyretin
from Israeli patient with familial amyloidotic polyneuropathy, position 33 mutation, confirmation by restriction fragment analysis, **153**, 198
synthesis in eye, evaluation (bovine, rat), **151**, 905
Triacylglycerol lipase
glycophosphatidylinositol-anchored protein-solubilizing, identification in serum (human), **150**, 476
Triacylglycerols
fish oil, absorption of eicosapentaenoic and docosahexaenoic acids from, effect of co-ingestion with high-fat meal (human), **156**, 960
Triatoma infestans
hemolymph free fatty acids, transport and utilization, **157**, 465
Trieicosapentaenoyl-glycerol
induction of prostaglandin I_3 and thromboxane A_3 *in vivo* formation after intravenous infusion (human), **151**, 1386

Trifluoperazine
inhibition of free arachidonic acid production in activated alveolar macrophages (rabbit), **156**, 947
Trifluoroacetophenone
cholesterol esterase-inhibiting, synthesis and evaluation, **151**, 554
Triglycerides
–phospholipid emulsions, removal of macrophage cholesterol (mouse), **155**, 709
Trihydroxamic acid
synthetic ferrichrome analogs, growth-promoting activity, evaluation (*Arthrobacter flavescens*), **157**, 389
3α,7α,12α-Trihydroxy-5β-cholestanoic acid
formation from 5β-cholestane-3α,7α,12α,26-tetrol in hepatic mitochondria (rabbit), **153**, 267
3,3′,5-Triiodothyronine
effects on
apolipoprotein A-I and A-IV gene transcription (rat liver), **154**, 997
glucose transporter activity in astrocytes (rat brain), **156**, 275
induction of
estrogen receptor level increase in estrogen-dependent pituitary tumor (rat), **152**, 44
intestinal apolipoprotein A-I secretion (rat), **153**, 606
inhibition of Ca^{2+}/calmodulin-induced activation of myosin light-chain kinase (chicken, rabbit), **152**, 270
and L-thyroxine, effects on tyrosinase induction by imidazole in cultured B16/C3 melanoma cells, comparison (mouse), **155**, 1293
Triose-phosphate isomerase
in aqueous solution, structural analysis by Fourier transform infrared spectroscopy (rabbit muscle), **152**, 69
Trioxilin A3
metabolic formation from hepoxilin A3 *in vitro*, analysis (rat brain), **151**, 493
Triticone A
characterization as potential molecular probe, **157**, 174
Tritium
quantitative exchange during [^{3}H]aflatoxin B_1 penetration through isolated skin (human), **153**, 395
Triton X-100
in detection of *N*-methyl-D-aspartic acid-sensitive [^{3}H]glutamate binding sites in brain synaptic membranes, **153**, 510
Trophoblast protein-1
antiviral activity, demonstration (sheep), **152**, 801
Trophoblasts
derived cells, mitogenic activity of uterine fluids (sheep), **156**, 108
Tropoelastin
mRNA, identification of multiple forms (chicken embryo), **154**, 1054
processing *in vitro*: evaluation of transport function associated with C-terminal domain (bovine), **153**, 545
Tropomyosin
isoform 2, synthesis suppression in metastatic v-Ha-*ras*-transformed NIH 3T3 cells (mouse), **157**, 1111
Trypanosoma brucei
bloodstream and procyclic forms, detection of distinct succinate–CoA ligases, **151**, 257
subspecies *brucei*, variants, identification of surface lipophosphoglycan, **153**, 1257
Trypanosoma cruzi
trypomastigote 83-kDa glycoprotein, binding to rat cardiac myoblasts, **155**, 256
Trypsin
induction of [hydroxyproline^3]-bradykinin release from human plasma and plasma protein Cohn's fraction IV-4 (bovine), **157**, 210
Trypsinogen
release from isolated pancreatic acini, stimulation by *Pseudomonas aeruginosa* cytotoxin, associated decrease in mRNA levels (rat), **152**, 688
Tryptophan
insertion into tryptophan-depleted lactate dehydrogenase for analysis of intramolecular movement (*Bacillus stearothermophilus*), **150**, 752
Tryptophan synthase
α subunit, site-directed mutagenesis: preparation and characterization of mutant proteins (*Salmonella typhimurium*), **151**, 672
TSH, *see* Thyrotropin
Tubulin
endosperm, amino acid composition and proteolytic generated domains, comparison with porcine neurotubulin (*Haemanthus katherinae*), **156**, 304
phosphorylation, thrombin- or 1,2-diacylglycerol-induced changes, analysis (human platelets), **151**, 1250
polymerization
and associated guanosine triphosphate hydrolysis, effects of aluminum ion, fluoride, and fluoroaluminate species (bovine brain), **151**, 1025
role in agonist- or phorbol ester-induced desensitization of prostaglandin receptor (Jurkat cells), **157**, 1046
Tumor cells, *see also* Cell lines
adrenocortical carcinoma, α_2-adrenergic receptor-mediated cGMP formation, inhibition by phorbol ester (rat), **156**, 905
aldosteronoma
and adjacent adrenal cells, differential redistribution of protein kinase C after stimulation with adrenocorticotropin and angiotensin II (human), **155**, 643
lack of atrial natriuretic peptide receptors (human), **152**, 37
basophilic leukemic, stimulation by crosslinked oligomer of IgE or phorbol ester, subsequent induction of histidine decarboxylase (rat), **151**, 1402
breast
epidermal growth factor receptor mRNA levels, regulation by progestin (human), **150**, 192
estrogen receptors, estrogen-induced increase (human), **155**, 943
estrogen-responsive, estrogen receptor mRNA levels, regulation by estrogen (human), **155**, 1113
2- and 16α-hydroxylation of estradiol-17β, enhancement by dioxin (human), **157**, 515
insulin-like growth factor receptors
for IGF-I, characterization (human), **154**, 326
and specific binding proteins, demonstration (hu-

man), **152**, 398
proliferation and protein kinase C translocation, effects of 1,2-dioctanoyl-glycerol (human), **151**, 458
pS2 gene transcription, activation by estrogen, mediation by 5′ flanking region (human), **151**, 306
secreted polypeptide, identification as estrogen-responsive gene product (human), **155**, 366
tumor promoter-mediated growth inhibition, associated phosphorylation of 27-kDa stress proteins by protein kinase C (human), **152**, 62
carcinoma, colony-stimulating factor 1 and c-*fms* gene expression, analysis (human), **157**, 395
colonic adenocarcinoma
apolipoprotein B-100 secretion: identification as major form of intestinal ApoB (human), **156**, 581
carrier-mediated uptake of cephalexin (human), **155**, 1082
doxorubicin-sensitive (LoVo/Dx) and -resistant (LoVo), histone H1 acetylation, effects of doxorubicin (human), **155**, 1221
photodynamic toxicity of chlorins and porphyrins: combined light and concentration dose responses for retained fraction (human), **151**, 506
synergistic cytocidal effect of interferon γ with tumor necrosis factor, association with inhibition of rRNA processing and (2′,5′)-oligo(A) activation of RNase L (human), **151**, 1180
colonic carcinoma, metastatic lines, gelatinase detection and characterization (mouse), **151**, 158
colorectal carcinoma
chromosome 5 allele loss at glucocorticoid receptor locus (human), **150**, 591
chromosome 18 allele loss at locus D18S6 (human), **155**, 463
cutaneous
fibrosarcoma, heparan sulfates with antithrombin III affinity and anticoagulant potency, isolation (mouse), **151**, 327
T-cell lymphoma, peripheral blood mononuclear cells from patients, decreased Epstein–Barr virus-induced transformation and elevated 2′,5′-oligoadenylate synthetase and RNase L activity after recombinant interferon α2b treatment, **153**, 448; *erratum*, **155**, 538
Daudi, lateral diffusion of surface differentiation antigen, acceleration by interferon α, measurement by fluorescence photobleaching (human), **157**, 808
embryonal carcinoma HM-1, MK1 gene expressed in early differentiation, cDNA cloning and sequencing (mouse), **151**, 1312
epidermoid carcinoma
epidermal growth factor receptors, cathepsin L-induced degradation, inhibition by c-Ha-*ras* gene products (human), **151**, 78
epidermal growth factor stimulation of phosphatidylinositol turnover without activation of protein kinase C, **155**, 877
epipharyngioma, growth inhibition by interferon β and γ, associated modulation of protein kinase C (human), **150**, 126
erythroleukemic
activin A binding sites, characterization (human), **157**, 844
erythropoietin receptor, analysis (human), **154**, 902
fibrosarcoma, *ras* oncogene-mediated induction of 92-kDa metalloproteinase: association with malignant phenotype (human), **154**, 832
gastric
biosynthetic pathways for Le^b and Y glycolipids, analysis by chromatogram-binding assay, **151**, 100
mucosal, pharmacology and molecular identification of vasoactive intestinal peptide receptors (human), **151**, 939
HeLa
constitutive and inducible expression of human interferon β1 gene cloned into episomal eukaryotic vector, **157**, 1175
DNA-stimulated protein phosphorylation in whole-cell and nuclear extracts, **157**, 535
mitogenic activity of ovine uterine fluids, **156**, 108
mutant, multidrug resistance, comparison with CHO cells, **153**, 598
hepatic, increased expression of phosphoprotein phosphatase 2Aα and 2Aβ (rat), **157**, 821
hepatoma
Alu sequence-containing transcript, induction by insulin (human), **156**, 1287
ascites and 3′-methyl-4-dimethylaminoazobenzene-induced, high expression of *N*-acetylglucosaminyltransferase III (rat), **152**, 107
C-reactive protein and serum amyloid A synthesis, role of interleukin 6 in regulation (human), **157**, 271
expression of platelet-derived growth factor, insulin-like growth factor I, and PDGF and IGF-I receptors: evidence for autocrine regulation (human), **153**, 39
γ-glutamyl transpeptidase, *in vitro* translation and processing (human), **154**, 1167
growth inhibition by 6-nitrocholesterol (rat), **153**, 671
heme synthesis, regulation by dimethyl sulfoxide (human), **153**, 869
and hepatocytes, differential regulation of insulin-like growth factor II receptors, characterization (rat liver), **151**, 815
HepG2, secretion of α_2-antiplasmin and C4, effect of tyrosine residue sulfation, **151**, 417
kininogen production, stimulation by dexamethasone (rat), **154**, 1160
and liver, mitochondrial NAD^+-isocitrate dehydrogenase and 2-oxoglutarate dehydrogenase, Ca^{2+} sensitivity (rat), **157**, 1218
low-density lipoprotein catabolism and cholesterol synthesis, reduction by cAMP (human), **156**, 424
mitochondrial membrane permeability, Ca^{2+}-dependent $NAD(P)^+$-induced alterations (rat), **154**, 934
negative cooperativity in insulin binding experiments, disappearance with short incubation time (rat), **157**, 1390
nuclear extracts, selective transcription of insulin-regulated gene (rat), **153**, 116
purification of 130-kDa membrane glycoprotein with

properties of heparin-binding growth factor receptor (human), **157**, 1007
Reuber's H-35, ornithine decarboxylase induction by L-asparagine, role of membrane Na^+/H^+ antiport (rat), **155**, 937
synergistic cytotoxic effect of tiazofurin and ribavirin (rat), **153**, 321
histiocytic lymphoma
CD11b/CD18-dependent adhesion to plastic, activation by hydrogen peroxide (human), **157**, 443
interleukin 1β gene transcription, induction by phorbol ester and inhibition by dexamethasone (human), **156**, 269
leukotriene D_4-induced signal transduction, inhibition by phorbol ester, rapid reversal by staurosporine, **157**, 521
HL-60
fatty acid uptake and distribution, effect of phorbol ester (human), **157**, 639
tumor necrosis factor-induced DNA fragmentation, analysis (human), **157**, 963
insulinoma
insulin secretion and phosphatidylcholine metabolism, stimulation by arginine vasopressin in synergy with TPA (rat), **151**, 717
unregulated secretion of exogenous glycotripeptide (hamster), **156**, 457
leukemic
multidrug-resistant line CCRF-CEM, P-glycoprotein gene expression, induction by actinomycin D (human), **155**, 754
overproduction of ornithine decarboxylase, effect on cell growth (mouse), **155**, 373
lymphocytic leukemic, chronic, Ia-associated invariant chain gene, detection of multiple transcription initiation sites (human), **152**, 184
lymphoid, polyunsaturated fatty acid-stimulated superoxide formation, role in specific cytotoxicity mechanism and applicability as model for tumor necrosis factor (mouse), **155**, 1033
lymphoma
Jα region involved in c-*myc*/Jα translocation, analysis and relationship to T-cell receptor α, β, and γ gene rearrangements (human), **154**, 550
prolactin binding and growth stimulation, effects of cyclosporin A (rat), **156**, 233
protein kinase C degradation without mRNA diminution after treatment with phorbol esters, **155**, 1311
superoxide anion generation capacity during differentiation induced by phorbol ester, specific activation by concanavalin A (human), **151**, 802
mastocytoma, release of plasminogen activator (mouse), **153**, 540
melanoma
binding and spreading on laminin substrates, inhibition by lectins (mouse), **156**, 411
in bioassay for interleukin 1 activity (human), **154**, 1189
B16 variants, different susceptibilities to retinoic acid-induced changes in melanotic expression (mouse), **155**, 773
chemotaxis, stimulation by insulin-like growth factors (human), **153**, 1076
demonstration of histamine H_2 receptors (human), **151**, 518
growth inhibition by interferon β and γ, associated modulation of protein kinase C (human), **150**, 126
heparan sulfates with antithrombin III affinity and anticoagulant potency, isolation (mouse), **151**, 327
tyrosinase induction by imidazole, effects of 3,3′,5-L-triiodothyronine and L-thyroxine, comparison (mouse), **155**, 1293
mesenchymal, SIS gene encoding platelet-derived growth factor-2 β-chain, structural alterations: reduction to homozygosity (human), **155**, 692
monocytic leukemic
acute, post-transcriptional control of interleukin 1 gene expression (human), **156**, 830
effect of fibroblast-derived differentiation-inducing factor (human), **155**, 24
fibrinolysis and receptors for plasminogen and urokinase, parallel induction by interferon γ (human), **155**, 418
multicellular spheroids, protein growth inhibitor from, partial purification (human, mouse), **152**, 463
myeloid leukemic
with deletion in chromosome 2, associated deletion of homeobox gene (mouse), **156**, 1265
effect of fibroblast-derived differentiation-inducing factor (human), **155**, 24
myeloma, overproduction of ornithine decarboxylase, effect on cell growth (mouse), **155**, 373
neuroblastoma
bradykinin-induced generation of inositol 1,4,5-trisphosphate, effects of pertussis toxin, extracellular Ca^{2+}, and protein kinase C down-regulation, **157**, 1429
cAMP levels, muscarinic receptor-mediated increase (human), **154**, 1137
× glioma hybrid, opioid receptor activity, modification by acid phosphatase, **152**, 1369
osteogenic sarcoma, 1,25-dihydroxyvitamin D_3 receptor, heterologous up-regulation by parathyroid hormone and parathyroid hormone-like peptide (rat), **156**, 588
pheochromocytoma
functional expression of human and rat tyrosine hydroxylase genes (rat), **157**, 1341
high-affinity atrial natriuretic factor receptors, characterization (rat), **156**, 78
mitogenic activity of insulin-like growth factors (rat), **154**, 1018
poly(ADP-ribose) synthetase levels, decrease during nerve growth factor-promoted neurite outgrowth (rat), **154**, 1034
$pp60^{c\text{-}src}$ localization in growth cone (rat), **157**, 1383
pro-opiomelanocortin gene expression using upstream transcription initiation sites (human), **155**, 895
tetrahydrobiopterin and total biopterin contents, transient increase by nerve growth factor (rat), **153**, 382
transfection with N-*ras* gene, effect on morphology and c-*fos*, c-*myc*, and ornithine decarboxylase expression, **150**, 1185

tyrosine hydroxylase and aromatic-L-amino-acid decarboxylase, inhibition by carcinogenic heterocyclic amines (rat), **157**, 494
pituitary
anterior, membrane preparations, adenylate cyclase activity and stability, enhancement by phorbol esters, **151**, 16
calcium flux, dihydropyridine inhibition, prevention by pertussis toxin pretreatment (rat), **151**, 361
estrogen-dependent, estrogen receptor level increase, induction by triiodothyronine (rat), **152**, 44
intracellular calcium levels, effect of fetal calf serum, **156**, 1411
plasma membrane Ca^{2+}-binding site, interactions with adriamycin, analysis with Tb^{3+}, **151**, 679
production of inositol phosphates, stimulation by bombesin and thyrotropin-releasing hormone, comparison, **154**, 654
prolactin-producing, identification of 64-kDa protein as candidate for thyrotropin-releasing hormone receptor (rat), **157**, 875
promyelocytic leukemic
development of resistance to antitumor ether-linked phospholipids after differentiation to granulocytic form (human), **156**, 1
differentiation, associated c-*myc* regulation, role of transcription interruption (human), **151**, 574
growth inhibition, differentiation, and c-*myc* mRNA decrease, synergistic induction by 1,25-dihydroxyvitamin D_3 and tumor necrosis factor α (human), **152**, 1151
lysates, phosphatidylethanol and phosphatidylglycerol synthesis by phospholipase D, activation by phorbol ester (human), **155**, 249
phospholipase D activation by chemotactic peptides (human), **150**, 355
prostatic carcinoma, growth, effect of opiates, **153**, 722
pulmonary
alteration of protein kinase isozymes (human), **150**, 163
phosphatidylinositol metabolism and prostaglandin E_2 synthesis, stimulation by ionophore A23187 and protein kinase C activators (human), **156**, 644
renal carcinoma
analysis of growth factors (human), **153**, 818
erythropoietin production, role of hydrogen peroxide (human), **154**, 773
sarcoma, methylcholanthrene-induced, serum levels of hybridoma growth factor/interleukin 6 in affected mice, **157**, 575
skin, promotion by phorbol ester, inhibition by staurosporine (mouse), **157**, 9
small cell lung carcinoma
autocrine signals, inhibition by bombesin receptor antagonist, **156**, 1383
growth inhibition by somatostatin analog *in vitro* and *in vivo* (human), **153**, 81
squamous carcinoma, head and neck, sensitivity to ionizing radiation, role of altered poly(adenosine diphosphoribose) synthesis (human), **154**, 1041
teratocarcinoma
c-*mos* expression, phorbol ester-induced changes (mouse), **154**, 339
differentiation, associated expression of homologous clustered oncogenes *Hst1* and *Int-2*, comparison (mouse), **157**, 618
expression of H-2K and H-2D genes (mouse), **157**, 648
mRNA down-regulated by tumor-promoting phorbol ester, encoding of transmembrane protein (mouse), **157**, 548
teratoma, expression of *HST1* oncogene (human), **155**, 1324; *erratum*, **157**, 850
testicular germ, expression of *HST1* oncogene (human), **155**, 1324; *erratum*, **157**, 850
thymoma, growth inhibition by 6-nitrocholesterol (mouse), **153**, 671
uterine leiomyoma, detection of gonadotropin-releasing hormone receptors (human), **152**, 1326
various types, homologous recombination between HIV DNAs, analysis of influencing factors (human), **157**, 1051
Tumor necrosis factor
cytotoxicity
inhibition by dexamethasone (murine fibroblasts), **153**, 109
mechanism, modeling with polyunsaturated fatty acid stimulation of superoxide formation in tumor cells (mouse), **155**, 1033
and receptor affinity, reduction by glucocorticoids (human MCF-7 cells, murine L-M cells), **153**, 402
effect on follicle-stimulating hormone-induced aromatase activity in cultured granulosa cells (rat), **153**, 792
human recombinant, induction of indoleamine dioxygenase, analysis (murine lung), **152**, 237
induction of DNA fragmentation, analysis (HL-60 cells), **157**, 963
and interferon γ, synergistic cytocidal effect in HT-29 cells, association with inhibition of rRNA processing and (2′,5′)-oligo(A) activation of RNase L (human colon), **151**, 1180
and interleukin 1, additive effects on prostacyclin synthesis induction in vascular endothelial cells (human), **156**, 1007
and lymphotoxin and interleukin 6, mRNA expression patterns, comparison (human peripheral blood mononuclear cells), **153**, 1144
regulation of c-*myc* expression during HL-60 differentiation, role of transcription interruption (human), **151**, 574
stimulation of
ATP synthesis (30A-5 preadipocytes), **157**, 1015
DNA synthesis *in vivo* (rat liver), **153**, 576
type α
and 1,25-dihydroxyvitamin D_3, synergistic induction of growth inhibition, differentiation, and c-*myc* mRNA decrease in HL-60 cells, **152**, 1151
effect on expression of elastase activity (human dermal fibroblasts, synoviocytes; rabbit articular chondrocytes), **155**, 786
induction of neutrophil chemotactic factor synthesis in

endothelial cells (human), **156**, 1340
production, cellular and molecular regulation by pentoxifylline (mouse), **155**, 1230
recombinant, chemotactic activity for peripheral blood neutrophils and monocytes, analysis (human), **153**, 1223
Tunicamycin
resistant CHO cells, gene amplification, **156**, 1063
Tyrosinase, *see* Monophenol monooxygenase
Tyrosine
membrane-associated proteins, chemotactic factor-induced phosphorylation, analysis in peritoneal neutrophils (rabbit), **151**, 794
phosphorylation in intact adipocytes, induction by insulin (rat), **155**, 1181
in position 503 of β-galactosidase, role in enzymatic activity, analysis by site-directed mutagenesis (*Escherichia coli*), **152**, 1050
residue 123, critical role in antiviral activity of murine interferon α1 (L929 cells), **155**, 714
sulfated, role in regulating cholecystokinin-33 biological activity (human), **153**, 1209
sulfation, effect on secretion of α_2-antiplasmin and C4 (HepG2 cells), **151**, 417
m-Tyrosine
radiobrominated analog, evaluation as CNS L-dopa positron-emission tomography tracer, **150**, 1027
Tyrosine aminotransferase
cardiac, glucagon-, isoproterenol-, or serum-mediated induction in cultured cells, role of endogenous polyamines (chicken embryo), **152**, 497
hepatic, stimulation by ethanol administration, role of acceleration of enzyme synthesis (rat), **155**, 1471
Tyrosine hydroxylase, *see* Tyrosine 3-monooxygenase
Tyrosine kinase, *see* Protein-tyrosine kinase
Tyrosine 3-monooxygenase
catalytic domain, characterization and amino-terminal sequence analysis (bovine adrenal gland), **151**, 1446
encoding genes, characterization: functional expression of promoters in rodent neuronal and nonneuronal cells (human, rat), **157**, 1341
inhibition by carcinogenic heterocyclic amines (PC12h cells), **157**, 494
Tyrosine *O*-sulfate
binding protein, isolation and characterization (bovine liver), **156**, 964
secreted fibronectin, alteration of binding affinities after desulfation (rat 3Y1 fibroblasts), **154**, 1094

U

U50-488H
inhibition of [^{3}H]nimodipine binding to Ca^{2+} channel receptor (rat brain), **149**, 1042; *errata*, **151**, 630; **152**, 948
Ubiquinol–cytochrome-*c* reductase
steady-state kinetics in submitochondrial particles, diffusional effects (bovine heart), **155**, 1145
Ubiquinone
binding protein of mitochondrial complex III, cDNA cloning and sequencing (human), **156**, 987
Ubiquitin
activating enzyme, encoding gene, localization on X chromosome (tsBN75 cells), **153**, 1173
UDPglucuronosyltransferase, *see* Glucuronosyltransferase
Ulcers
gastric, stress- and HCl–ethanol-induced, suppression by metallothionein II intravenous administration (rat), **151**, 725
Uracil
interaction with horseradish peroxidase, **153**, 904
Urate oxidase
mRNA, 3′-untranslated region, detection of homologous human genomic sequence (rat), **155**, 1266
Urea stibamine
inhibition of type I DNA topoisomerase (*Leishmania donovani*), **152**, 605
Uricase, *see* Urate oxidase
Uridine
intracellular levels and transport, effects of *Clostridium perfringens* enterotoxin, role in macromolecular synthesis inhibition (Vero cells), **153**, 699
Urine
catecholamine levels, effect of atrial natriuretic factor (dog), **156**, 1070
derived digitalis-like factor, purification and characterization (human), **154**, 847
Urokinase, *see* Plasminogen activator, urokinase-type
Uroporphyrinogen decarboxylase
erythrocyte, defective activity in familial porphyria cutanea tarda, mechanism: roles of metabolic lesion and endogenous porphyrinemia (human), **154**, 39
Uteroglobin
gene promoter, progesterone-dependent binding of *trans*-acting factor, analysis (rabbit), **156**, 1368
related protein, detection in human neonatal tracheobronchial washings (rabbit), **152**, 1447
Uterus
angiotensin II-binding proteins, biochemical and immunological properties, comparison with other tissues (rabbit), **156**, 1230
epidermal growth factor binding during peri-implantation period (rat), **153**, 564
ovine, fluids, mitogenic activity in mammalian cells, **156**, 108
UTP (uridine 5′-triphosphate)
5-azido analog, characterization as substrate for RNA polymerase (*Escherichia coli*), **150**, 917
extracellular, enhancement of intracellular calcium levels in Madin–Darby canine kidney cells, **156**, 1139

V

Vaccines
cholera, oral, potential application of cholera toxin-excreting *Escherichia coli*, **153**, 967

UNIVERSITY OF HAWAII LIBRARY

synthetic malarial, construction of immunogens for (mouse), **153**, 31
Valine
^{14}C-labeled, incorporation and relationship to hexokinase activity in developing brain, insulin effect (rat), **154**, 450
Vascular rings
endothelium-dependent relaxation, relationship to nitric oxide formation with L-arginine as physiologic precursor (porcine aorta), **153**, 1251
relaxation induced by mono-L-arginine-containing compounds, analysis (rat aorta), **154**, 332
Vasoactive intestinal peptide receptors
pharmacology and molecular identification (human stomach), **151**, 939
Vasoconstriction
induction by
endothelin in cultured smooth muscle cells, cellular mechanism (rat aorta), **154**, 868; **157**, 977
potassium chloride, potentiating effect of phorbol ester, role of calcium (rat aorta), **156**, 1195
Vasopressin
and glucagon, induced Ca^{2+} influx in liver, inhibition by exposure to depolarizing concentrations of K^+ (rat), **153**, 1282
stimulation of
breakdown and metabolism of inositol lipids in hepatocytes, early effects of *Escherichia coli* endotoxin (rat), **155**, 151
phosphatidylcholine hydrolysis and diacylglycerol accumulation in cultured REF52 cells, **152**, 565
Vasopressin-neurophysin precursor
glycopeptide moiety, identification as neurohypophysial prolactin-releasing factor (rat), **151**, 524
Vasopressin receptors
V1 type from smooth muscle and liver, differential coupling to guanine nucleotide-binding proteins (bovine, rat), **151**, 1293
Vectors
plasmid, erythroid differentiation factor cDNA-containing, expression in CHO cells, **151**, 230
retroviral N2, prepared with amphotropic or xenotropic envelope, comparative infectivity in human hematopoietic progenitor cells, **151**, 201
Venom
Cerastes cerastes, and subfractions, induction of platelet aggregation, **150**, 909
Heloderma horridum horridum, lethal toxin purification and characterization, **154**, 613
Leiurus quinquestriatus, effect on K^+ movements in rat pancreatic islets, **152**, 1242
Naja nigricollis, identification of cardiotoxic nonenzymatic anticoagulants and platelet aggregation inhibitors, **150**, 1012
Verapamil
effect on multidrug resistance and labeling of P-glycoprotein by vinblastine photoaffinity analog (human leukemic cells), **153**, 959
inhibition of cyclosporin A transport in isolated renal proximal tubule cells (rabbit), **157**, 1226
reversal of chloroquine resistance in malaria (human), **155**, 476
Verotoxin 2
Escherichia coli, specific binding to globotriosyl ceramide, **152**, 674
Vesicles
brush border membrane, formed from duodenal biopsies, Na^+-dependent concentrative L-leucine and D-glucose uptake (human), **156**, 164
cell envelope, glutamate uptake analysis (*Halobacterium halobium*), **152**, 1090
phospholipid, *see* Phospholipids, vesicles
plasma membrane
ATP-dependent Cl^- uptake, demonstration (rat brain), **154**, 108
from platelets, Ca^{2+} release, induction by inositol 1,4,5-trisphosphate, **150**, 1021
synaptic, detection of distinct sites coupled to high-affinity ω-conotoxin receptors (rat brain), **154**, 298
sarcolemmal, Ca^{2+} pump, guanine nucleotide- and inositol trisphosphate-induced inhibition (rat heart), **152**, 1111
Vesicular stomatitis virus
G protein, intracellular transport in CHO cells lacking nuclear envelope, **152**, 469
infectivity, antagonistic effect of interferon, inhibition by neomycin and mimicking by diacylglycerols (human embryonic fibroblasts), **151**, 402
Vimentin
from CHO cells, identification as protein kinase C substrate, **150**, 1006
expression in renal proximal tubule epithelial cells in culture, analysis (rat), **157**, 1316
Vinblastine
photoaffinity analog, labeling of P-glycoprotein, effects of indole alkaloids (human leukemic cells), **153**, 959
Vinculin
platelet-derived growth factor-induced disruption from adhesion plaques, inhibition by interferon (murine fibroblasts), **150**, 1207; *erratum*, **151**, 1461
Vindoline
effect on multidrug resistance and labeling of P-glycoprotein by vinblastine photoaffinity analog (human leukemic cells), **153**, 959
Vitamin A
binding protein
cellular, pulmonary mRNA levels, retinoic acid-induced increase in retinol-deficient rats, **156**, 712
mRNA detection in seminiferous tubule somatic cells (rat), **154**, 1174; *erratum*, **157**, 1444
synthesis in eye (rat), **157**, 1078
deficient testis, protein synthesis, early effects of retinol and retinoic acid (rat), **151**, 53
effect on retinol-binding protein mRNA levels in cultured Sertoli cells (rat), **152**, 1504
identification as protein HC chromophore (human), **155**, 1424
induction of platelet aggregation via phospholipase A_2 activation (rabbit), **154**, 1075

Vitamin D
binding protein, association with unsaturated fatty acids, **153**, 1019
various forms, effects on brush border membrane fluidity and phosphate and glucose transport (rat kidney), **150**, 1193
Vitamin E
effect on fluidity of lecithin liposomes, **150**, 469; *erratum*, **151**, 631
inhibition of protein kinase C (bovine brain), **154**, 694
and selenium, deficient rats, respiratory ethane production, effect of 3-methylindole, **153**, 535
Vitamin K epoxide reductase
reduced thioredoxin as physiological cofactor, assessment (bovine and rat hepatic microsomes), **155**, 1248
Vitellogenin
subunits, origination from common precursor (mosquito), **155**, 436
Vitronectin
identification as substrate for tranglutaminases (guinea pig), **157**, 115
phosphorylation by cAMP-dependent protein kinase released by thrombin-activated platelets (human), **157**, 1131
von Willebrand factor
encoding gene, identification of repetitive Alu sequences 5′ to transcription initiation site (human), **153**, 1159
VP-16
stabilization of topoisomerase II–DNA complexes, in analysis of sequence recognition sites, **151**, 1233

W

W-7, *see* *N*-(6-Aminohexyl)-5-chloro-1-naphthalenesulfonamide
Water
immersion, augmentation of plasma levels of proatrial natriuretic factor immunoreactive N-terminal fragment (human), **156**, 228
low thermodynamic activity in carbohydrate media, associated lysozyme kinetics: hydration memory phenomenon, **155**, 816
–toluene–phospholipid ternary system, transfer of spores, bacteria, and yeast into: preservation of bacterial respiratory chain, **151**, 1074
Wheat germ agglutinin
effects on cell binding and spreading of laminin substrates, (murine melanoma cells), **156**, 411
Whey
39-kDa protein, from mammary secretions collected during nonlactating period, isolation and characterization (bovine), **150**, 329
Wolff–Chaikoff effect
role of inhibition of H_2O_2 generation (canine thyroid), **154**, 1287

X

XAC
antagonism of A_1 adenosine receptor, site of action (rat adipocyte membranes), **153**, 939
Xanthine dehydrogenase
conversion to xanthine oxidase in isolated hepatocytes after reoxygenation injury (rat), **155**, 278
Xanthine oxidase
formation from xanthine dehydrogenase in isolated hepatocytes after reoxygenation injury (rat), **155**, 278
Xeroderma pigmentosum
complementation group C cells, primary and transformed, differential regulation of excision repair (human), **156**, 557
Xylose isomerase
active site, detection of essential histidine residue (*Streptomyces* sp.), **155**, 270
purification and characterization (*Chainia* sp.), **155**, 411

Y

Yohimbine
effect on multidrug resistance and labeling of P-glycoprotein by vinblastine photoaffinity analog (human leukemic cells), **153**, 959

Z

Zellweger syndrome
deficiency of L-pipecolate oxidase identified in normal liver (human), **154**, 33
and related disorders, complementary cell lines from affected patients, peroxisome assembly after fusion, kinetic analysis, **152**, 1083
Zinc
accumulation by hepatocytes *in vitro*, endotoxin-induced, mediation by metallothionein synthesis, **152**, 874
binding to 200-kDa neurofilament protein (bovine, human spinal cord), **152**, 598
enhancement of phorbol ester binding affinity of protein kinase C (rabbit T cells), **154**, 578
Zymosan
effect on superoxide anion release from bone marrow-derived macrophages, comparison with phorbol ester (rat), **151**, 641

UNIVERSITY OF HAWAII LIBRARY